FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Hubbard Buys ADM Mill; to Continue Archer Feed Line

MANKATO, MINN.—Purchase of the Mankato feed plant of the Archer-Daniels-Midland Co., Minneapolis, by the Hubbard Milling Co., Mankato, was announced this week by officials of both companies.

Included in the transaction, which has Sept. 1 as the effective date of transfer, are all the current physical properties of ADM's Archer Feed Division.

Hubbard officials said the company will continue to manufacture the complete line of Archer Booster feeds under Archer formulations and will continue to offer Archer feeds through the existing organization of approximately 300 Archer dealers.

(Turn to HUBBARD, page 119)

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GTA Buys String Of ADM Elevators

ST. PAUL—The 37 country and 5 sub-terminal elevators of the Commander Elevator division of Archer-Daniels-Midland Co., Minneapolis, will be placed under the ownership and management of the Farmers Union Grain Terminal Assn., St. Paul, Aug. 19, GTA officials announced this week.

ADM's sale of its Commander Elevator division and its Mankato, Minn., feed plant (see related story) removes the company from the business of manufacturing its own line of formula

(Turn to ELEVATORS, page 123)

Corn Growers Told Of Crotalaria Danger

TALLAHASSEE, FLA.—Lee Thompson, agriculture commissioner, has warned corn growers about the danger of crotalaria and has pointed out that the existence of the seed would prevent its use as a commercial feed mixture.

His warning came on the heels of reports in Georgia that the cover crop is causing considerable trouble in that state. At the recent meeting of the Georgia Feed Manufacturers Assn. in Savannah, members heard a long dis-

(Turn to CROTALARIA, page 8)

FDA Seen Moving More Strongly on Residues

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—As previously reported, the Food and Drug Administration apparently is about to embark on a new and more vigorous enforcement program in regard to chemicals in foods—and this will affect feeds, pet foods and other products.

Filling out a limited report last week (Feedstuffs, Aug. 6), it is now possible to provide some additional information.

The top officials of FDA told this reporter that the agency planned to move rapidly in the direction of requiring certification that ingredients in mixed feed do not contain residuals of pesticidal chemicals in excess of those permitted by the FDA act or its administrative decisions. It was understood that labeling as required by state feed control laws would be involved.

An FDA official said the feed industry should be aware of plans for activity which is coming.

This information followed a meeting of FDA officials with a state feed control group. The two groups met the day before the FDA official advised this reporter of the contemplated pesticidal chemical certification drive.

The FDA activity possibly would be announced at the annual feed control officials' meeting here in October, but by that time, FDA actions would be promulgated and under way.

The FDA activity does not involve any further amendment of its law.

In Other Industries

In fact, in the fresh fruit and vegetable field and in the processing of those commodities, USDA is currently acting as an agent of FDA when

(Turn to FDA, page 122)

N. C. Feed Men Urged to Strive for Better Contracts and More Efficiency

By ROBERT H. BROWN
Special Correspondent

ASHEVILLE, N.C. — A four-man panel, convened to discuss integration in the Carolinas, urged members of the North Carolina Feed Manufacturers Assn. to strive for better contracts with growers and more efficient growers, or else face the possibility of total integration.

As one possible solution to the problem delegates to the 23rd annual meeting were told the answer may be in obtaining "contracts where growers share the profits, if any, and share the losses, if any."

The panel was composed of: C. W. Tilson, Central Carolina Farmers Exchange, Durham; Tom Cameron, Upchurch Milling & Storage Co., Raeford; D. H. Taylor, Leco Feed Mills, Kinston; and Bob Davis, W. A. Davis Milling Co., High Point. James Westall, Earle-Chesterfield Co., Asheville, was the moderator.

Mr. Tilson, speaking of the broiler (most of the panelists were speaking

(Turn to NORTH CAROLINA, page 7)

Southern States' Total Volume Off

RICHMOND, VA.—Total volume of business of Southern States Cooperative and its affiliates for the year ended June 30 was below 1958-59, but net savings were higher, according to a preliminary report made recently by Howard H. Gordon, general manager, to the board of directors and the organization's membership.

The lowering of total volume was "a direct result of planned sharp reduction in the number of chicken broilers grown under contract," Mr. Gordon said in the group's Service Guide publication, pointing to the net savings and saying the financial position was "much improved."

Mr. Gordon reported a drop in feed volume from 955,000 tons the previ-

(Turn to SOUTHERN STATES, page 123)

Feed Industry Hears Latest Research at Wisconsin School

By JAMES K. RUTTER
Feedstuffs Staff

MADISON, WIS.—"The research now in progress in this country dealing with livestock and poultry nutrition and production is tremendous . . . and nutrition today is recognized as one of the most promising steps to world peace and security. Scientists, feed manufacturers and dealers are really co-workers, and each group plays a vital part in the making of nutritional progress."

This summarizes some thoughts presented by Dr. W. W. Cravens to the 250 men attending the 11th Annual Nutrition School for Feed Men held this week at the University of Wisconsin in Madison. Dr. Cravens, director of feed research for McMillan Feed Mills in Decatur, Ind., is chairman of the Nutrition Council of the American Feed Manufacturers Assn.

The nutrition school is sponsored annually by the College of Agriculture of the University of Wisconsin in cooperation with the Central Retail Feed Assn.

Dr. Cravens opened the formal addresses at the nutrition school by pointing out that while these three co-workers in nutritional progress are really a team, they each have different, though equally important, functions and responsibilities.

"Scientists in both the universities and in the feed industry are charged with the duties of seeking and applying new information," he said.

(Turn to RESEARCH, page 122)

AFMA Marketing Seminar to Study Sales Techniques

CHICAGO—The second annual Marketing Seminar, offered by the sales executives council of American Feed Manufacturers Assn. next month in Chicago, will feature two outstanding speakers from "outside the feed industry."

Pierre D. Martineau, director of research and marketing, The Chicago Tribune, and Dr. S. N. Stevens, president of a Chicago counseling firm in the field of human relations to business and industry, will be among those featured on the program Sept. 21-22 at the Morrison Hotel.

The limit imposed at last year's meeting of two sales executives per AFMA active member company has been removed. AFMA officials expect 200 to 300 sales and marketing exec-

(Turn to SEMINAR, page 119)

W. D. McMillan, G.L.F. Nutrition Director, Dies

ITHACA, N.Y.—William D. McMillan, 60, director of animal nutrition for Cooperative G.L.F. Exchange, Inc., died Aug. 9 in Tompkins County Hospital.

Mr. McMillan was well known in the feed industry as one of the leading nutritionists in the East. He was a member of the executive committee of the mills division of G.L.F.

He first became ill during the Cornell Nutrition Conference in Buffalo

(Turn to DIRECTOR, page 122)

FEEDSTUFFS *Features This Week*

PELLETED FEEDS—A Nebraska feed firm tells why pelleted feeds are so important in its merchandising program. Page 32.

ENZYMES—A review of the work reported on enzyme supplementation and water treatment of feeds for poultry is given on page 40.

OPERATING COSTS—The relationship of costs to the other facets of the feed business are analyzed. Page 84.

TRENDS IN WEST—Some observations of feed industry developments in the western states are reported. Page 96.

ADDITIVES—Background on both the older and newer additives is given by a college scientist on page 100.

COSTS—Costs of four systems of feed distribution are compared and some reasons for the differences are offered on page 104.

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Top of the Hopper

THE PEOPLE WHO ARE MOST concerned about the outlook for broiler prices and those watching beef trends find a common ground in observing that smaller supplies of pork in prospect should make their product prices more favorable. The relative supplies and prices of various meats have much to do with what Mama picks up at the supermarket, and it's interesting to observe that Mr. Market Hog finds himself in the swing position between the quick change broiler market and the ponderous beef cycle.

AN ITEM APPEARING in the "Hopper" two weeks ago about the southern farmer who was ecstatic about his home mill prompted a reader to wonder if we might not appear to be "plugging" this development. We're not, of course. Just presented the item as an example of what some feeders are thinking and saying. Feed men are working with those who do their own mixing and those who don't. The total cost of doing the feeding job must be considered in reaching a decision to install farm mixing and grinding equipment, and feed men are in a good position to help farmers weigh all the factors involved. One suggestion (from a top feed executive) is that feed men ask the farmer to determine what he is paying himself for running a mill and compare this with what he would make applying his skill to managing other farm operations.

FEED MEN SHOULD BE fully aware of what some of the farm publications are saying about farm milling and the companion subject, group buying of ingredients and other supplies and equipment. Hogcast, a monthly business letter for hog growers published by Farm Journal, in its current issue plugs group buying as the "newest way to cut costs." It declares that some producers are "slashing 80¢ to $2 off their cost of producing 100 lb. of pork with little or no investment of money."

The report describes the operation of such a group in Illinois, a cooperative called the L. G. Feed Co. One of the members serves as a purchasing agent who combines the orders of all into one order for each ingredient. Hogcast says the group reports savings of $10 ton on soybean meal purchases, 50% on minerals, up to 30% on antibiotics and even more on vitamins. Savings also were reported on vaccines, bins, augers and feeders.

Hogcast points out that members of such groups could make a saving with such purchases by having a complete supplement manufactured, but if it did it would have to pay sales commissions and a manufacturer's profit. It suggests that a group needs to own processing equipment on a farm to take full advantage of the operation. One member, it suggests, could make a premix for his neighbors on a custom basis or several could own a portable mixer jointly.

Group buying, the newsletter says, doesn't usually hurt the dealer since he gets volume sales at low cost and is glad to have the business. "But he does have to compete for it." In the example described the group by-passed the dealer. Hogcast tells its readers that "when you organize a company or a co-op you become a 'legitimate' customer" with which suppliers will deal direct.

Another farm publication, Successful Farming, reports that four co-ops have been formed in Illinois to buy soybean meal and premixes at wholesale rates, and three more are being formed. Members go to the University of Illinois for special meetings with researchers and then report back on latest facts for improvement of their rations. Most of these groups have a local mill do their grinding and mixing for them, the publication reports.

(Turn to **TOP OF THE HOPPER**, page 117)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed manufacturers continued to run their mills a full five days this week, but reports from most regions indicated that volume was on the light side. August has presented no surprises. If anything, business is running a little under expected levels. This week's wholesale feedstuff price index of 73.7 was down from the 74.1 figure of a week earlier and the 78.2 index of a year earlier. The feed-grain index slipped to 65.5 from 65.7 in a week's time. The new position was 3.6 under a year ago. Up to 15.3 went the hog-corn ratio, an increase of .1 from a week earlier. A year ago the ratio was 11.3. (Feed markets in detail on pages 120-122.)

Northwest

It's really nothing out of the ordinary for feed sales in the Northwest to be slow in August. But feed manufacturers in this region are saying that current feed movement is creeping at a pace "slower than it ought to be."

Hog and turkey feed sales are holding up "fairly well," but not up to expectations. Cattle feeds are in a slump that isn't expected to improve for at least a couple of weeks. Recent rains have given pastures new life that may hang on until almost the first of next month.

It could be that good pastures and the outlook for large crops of feed grains are primarily responsible for holding down demand for manufactured feeds.

Feeders are buying only what they need; dealers are buying hand-to-mouth, and manufacturers are in the ingredient markets on a day-by-day basis. Feed millers are still running five days a week but, in some instances, anyway, those five days are not ones of heavy run.

Around the circle go the effects of this slowness. Feed business is slow, so ingredient demand has tapered off. Ingredient suppliers are lowering prices of many items, and down with them go manufactured feed prices—something like an average of $1@2 this week.

Southwest

Formula feed business experienced no change from the moderate pace in the southwest. Mills ran five days for the most part but, as one mill put it, these are short days, not the 16-18 hour days they like to see.

Hog and turkey feeds continued to move well while other lines remained about the same. Egg feeds were very slow and dairy and cattle feeds were moving in volume. Broiler feed manufacturers experienced a good week.

With August business usually slow every year the opinion was expressed that the present business level could prevail right up to the time that cattle and fall pig and hog feed business takes over turkey business which will be dwindling as we get into the fall.

Ingredient prices took some sharp breaks this week with soybean meal and millfeeds being the big losers. Formula feed prices will be unchanged to slightly lower.

Northeast

Wildcat strikes plus tentative agreements upset the formula feed market in Buffalo. The broiler market was under pressure and fell off. Egg prices were about steady to weak. The production pattern remained the same as a week ago with growing feeds leading, followed by dairy, turkey and broiler feeds.

Corn was about steady with last week. Oats were widely varied in prices quoted as a result of new crop movement and were down 1¢ from last week. Barley and feed wheat showed no change from a week ago.

Tallow was unchanged, but continued strong. Meat scraps were strong and up about $2 from a week ago. Fish meal was weak and sold under $100 ton, something which hasn't happened in years.

Gluten meal was unchanged. Linseed oil meal was weak and down $1@1.50 from last week.

Hominy was strong and $1@1.50 higher. Brewers grains were up $1@2. Gluten feed was up $2 from a week ago. Distillers grains continued scarce. Alfalfa meal was up about $1.

Trading in millfeeds was slow and prices softened some. Prices rose on the basis of the strike and backed down after the men returned to work. Prices were even to 50¢ lower than last week.

Running time of the mills was disrupted by pending and actual wildcat strikes. Some mills averaged a 36-hour week while others lost a day or two.

Southeast

Formula feed business is reported as being practically unchanged and continues to be on the slow side. Most of the major feed manufacturers have bought the bulk of their feed ingredients for the month of August and the first half of September and are inclined to wait before making additional commitments.

Most of the southeastern states continue to cut back on their chick replacements. Broiler prices dropped 1¢ lb. this week, making the price 16¢ lb., f.o.b. the farms, which barely gives the growers a break-even basis.

Some southeastern cottonseed oil mills will commence crushing cottonseed between Aug. 15 and 22. Some earlier sales of cottonseed meal were made for August shipment at $60 ton, f.o.b. the mills. However with additional offerings by more mills, the f.o.b. price has declined $4 ton for September-October shipment.

Loaded cars of soybean meal on track at southeastern mills continue to depress the market.

As in the past, import fish meal still depresses sales of domestic production due to its price being $5@10 ton lower, f.o.b. Atlantic and Gulf ports.

Cottonseed hulls continue very tight with two or three cars moving for quick shipment at $30, f.o.b. the mills, whereas the asking price for new crop hulls for shipment the first week in September is $16 ton, sacked, f.o.b.

Citrus pulp continues to be very tight and it is reported that some sales were made this week at $50, f.o.b. Florida producing points. The only offerings of citrus pulp by the processors are through cancellations.

Central States

There has been a very slight broadening in the demand for formula feeds, and this betterment has not really been such that it could be expressed on a percentage basis. But

(Turn to **MARKETS**, page 126)

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USDA Not to Let Wet Corn Take-Over Bring Low Prices

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—U.S. Department of Agriculture officials — somewhat disconcerted by trade reports from a usually reliable Iowa source of the take-over of what may amount to between 40 and 50 million bushels of 1959 crop corn from farms because of high moisture—said this week that under no circumstances will top policy permit Commodity Credit Corp. sales of corn before the new crop year which will break the Chicago market cash price.

This information is disclosed from confidential trade inquiries to Feedstuffs here and had elicited previous information that CCC would be an active seller of corn at country stations if the corn was of high moisture content and that CCC planned to sell corn delivered to it on take-over at country stations.

Subsequently additional information, identified as coming from a responsible Iowa co-op elevator leader, provoked from equally responsible CCC sales officials the information that if this report of a delivery of between 40 and 50 million bushels of wet corn from Iowa is correct, the government policy is to withhold its good quality corn from the market and only sell the discount corn at the country points.

In short, as wet corn deliveries exceed the USDA estimates, USDA will compensate the market place by withdrawal of its good stocks to maintain the cash price at Chicago.

This report represents a careful analysis of government reports and trade estimates and in the last analysis the government will hold the reins on the price situation in the big Chicago market.

This is leap year—the political year—and for sure the administration is not going to upset the rather favorable apple cart of corn-hog prices between now and the November election.

3-Day Wildcat Strike Against 12 Buffalo Grain Elevators Ends

BUFFALO, N.Y.—Twelve grain elevators were back in operation this week following the end of a three-day wildcat strike by 500 employees.

The workers, represented by Local 1286, Grain Elevator Employees (AFL-CIO), voted overwhelmingly to end their walkout which idled the elevators and halted the unloading of hundreds of grain-laden railroad cars.

The strike, which union leaders said was unauthorized, began Aug. 6. It was touched off by a grievance over non-payment for time lost on medical treatment for an employee on workmen's compensation.

The matter was discussed for several hours in Hotel Buffalo by representatives of Local 1286 and the Grain Elevator Managers Assn. Clarence M. LaMotte, commissioner of the Federal Mediation & Conciliation Service, participated.

He said the session produced an agreement under which the elevators would follow "past practices" on lost-time payments, and there would be no reprisals against the strikers.

Local 1286 currently is in wage negotiations with the elevator association under a re-opener in their present three-year pact.

REPORTER RETIRES

OGDEN, UTAH—Clarence A. Anderson, a market reporter with the livestock division, U.S. Department of Agriculture, has retired here after 35 years of service.

CONTROL GROUP—This is one of the control groups used by Moorman researchers in cattle grub control work. Note the evidence of grub damage to cattle in the right center.

Grub-Killing Cattle Feed Available Soon

QUINCY, ILL. — Plans are being made by the Moorman Manufacturing Co. to make available a complete mineral supplement containing a grubcide, company officials report.

As previously announced, the use of the grubicide in the supplement has been cleared by the U.S. Department of Agriculture and the Food and Drug Administration (Feedstuffs, July 23).

The supplement was developed by research workers of Moorman after four years' testing with more than 2,500 head of cattle in various parts of the nation, the firm reports.

The product, Rid-Ezy, contains ronnel, an organic phosphate compound produced by Dow Chemical Co., that "acts systemically, killing grubs as they migrate through the body system of cattle and before they appear in the animals' backs," company officials say.

"In only 14 days' feeding in the fall, Rid-Ezy has been proved to kill 90% or more of the grubs—while they are within the system but before they migrate to the animals' backs," say Moorman officials. "Rid-Ezy will make it possible for cattlemen to avoid costly losses from damaged meat and hides—grubby cattle are discounted 50¢ to $1 or more per 100 lb.—resulting in losses of millions of dollars. Various experimental tests have shown that treated cattle gain 1/10 to 1/3 lb. more per head daily and convert feed more efficiently.

"This new product cleared by federal authorities can lead to the most complete control of the cattle grub to date," they add. "Although the available supply of Rid-Ezy is limited, plans are to make it available to many Moorman customers this year."

Elevators Filling Rapidly in Texas

FT. WORTH — Most elevators in the high plains and upper south plains of Texas are filled from 70 to 90% of capacity now and warehousemen expect them to be filled to 95 to 100% of capacity by Dec. 1, according to the Texas Grain & Feed Assn.

There are spots in central Texas where elevators are filled to only 50 to 75% of capacity. But, many of them are expected to be filled to capacity by the end of the harvest season.

In a few areas where crops have been short, warehousemen doubt that facilities will be more than 75 to 90% filled this winter.

Some country elevators have already asked for loading orders to make room for local milo which has been reported to be larger than usual.

Freight Rates Cut On Oilseed Meals

MEMPHIS, TENN.—The National Cottonseed Products Assn., Inc., announced that reduced rates on cottonseed and soybean cake and oil meal from Mississippi Valley points to Gulf ports for export have been published by the Southern Freight Assn., to become effective Aug. 19.

Some of these rates are Helena, Ark., $4.40; Cairo, Ill., $6; Clarksdale, Miss., $4.20; Greenville, Miss., $3.70; and Memphis, Tenn., $4.60 ton.

The Southern Ports Foreign Freight Committee has approved the schedule of reduced rates on multiple car shipments of soybean oil meal, the association reported. On the basis of a protest filed by a large soybean processor, the NCPA said, the Interstate Commerce Commission has ordered an investigation of the lawfulness of the new rates.

Seeks State Office

CUMMING, GA.—A. C. Smith, Jr., president of the Georgia Poultry Federation and operator of a feed mill, has announced that he will be a candidate for representative in the state legislature.

As one of his platforms, he has pledged to support help for poultrymen in overcoming problems of high condemnations and other poultry problems.

PRODUCTION SCHOOL ENROLLMENT INCREASING

KANSAS CITY — Enrollments for the Feed Production School which will be held at Hotel Continental here Sept. 21-23, are coming in at an accelerated pace as the time approaches, Lloyd Larson, president, announced this week that there are presently represented in the enrollees men from 28 states, two Canadian provinces, Colombia, England and Puerto Rico.

Because of the limited facilities at Hotel Continental, Mr. Larson has urged early enrollment to assure confirmation. Hotel reservations are made for each enrollee by Feed Production School personnel.

One of the special topics to be discussed during an evening panel session will concern factors feed men should consider regarding on-the-farm feed mixing. Panel members will be named within the next few weeks, Mr. Larson said.

Complete enrollment information may be obtained from Feed Production School, Inc., 20 West Ninth St., Kansas City 5, Mo.

PLANNING S.E. EGG MARKETING GROUP

★

ATLANTA—Leaders in the movement to establish a large southeastern egg marketing co-op were scheduled to meet in Atlanta Friday, Aug. 12, to discuss further plans.

Harold Ford, secretary of the Southeastern Egg & Poultry Assn., said the meeting would be held at the Dinkler Plaza Hotel and such items as by-laws and charter would be discussed.

The marketing association has reportedly been in the process of formation for several months.

The purpose of the association will be to market southern produced eggs in an orderly manner in the South and to promote consumption of them by the public.

Mr. Ford said many details have yet to be worked out before the association gets started if the participants gathering in Atlanta this weekend agree to continue their efforts toward the formation of the association.

Warehousing Costs To Be Texas Topic

FT. WORTH — Two "cost conferences" for country warehousemen are now scheduled for Aug. 16 at the Worth Hotel here and Aug. 17 at Texas Technological College, Lubbock, according to the Texas Grain & Feed Assn.

The association reports that these meetings are for the purpose of discussing ways and means of reducing cost in country elevators because of the impact of the sharply lower rates in the Uniform Grain Storage Agreement. The events are described as "conferences" and not "lectures." There will be discussion leaders, but there will be time for exchange of information from the floor, it is reported.

Among the subjects to be discussed are cost records in country elevators, insect control, elevator equipment, insurance costs, labor costs and financing costs.

Sponsors for the two meetings are: Fort Worth Chamber of Commerce, Texas Grain & Feed Assn., West Texas Chamber of Commerce, Lubbock Chamber of Commerce, Storage & Drying Conference and Texas Technological College.

ADM Announces New Executive Committee

MINNEAPOLIS — Directors of Archer-Daniels-Midland Co. this week elected a new executive committee, and declared a dividend of 50¢ a share on common stock, payable Sept. 1 to stockholders of record Aug. 19.

The new executive committee is composed of the chairman, John H. Daniels, ADM president and chief executive officer; Thomas L. Daniels, chairman of the board; Shreve M. Archer, Jr., Carmel, Cal.; Robert W. Austin, business administration professor at Harvard University, and Samuel H. Rogers, vice president, Northwestern National Bank of Minneapolis. All are directors of ADM.

INSTALLING NEW MILL

ROSHOLT, S.D.—The Farmers Co-op Elevator Co. is installing a new feed mill, larger than the old one.

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In the early days of the West, fast-riding settlers and cattlemen borrowed the Spanish word "cincha" and called their strong horsehair saddle girths a cinch. These girths of braided horsehair were so strong and could be drawn so tightly that a rider could have no fear of slipping saddle. Therefore, the word cinch became a synonym for sure-fire certainty. Later, settlers grew to trust the "modern" lead pipe and its capabilities for transporting water. To give emphasis to "cinch", lead-pipe was added and the phrase "Lead-Pipe Cinch" became an emphatic description of something certain and predictable.

Since the early days of "dehy", Small Dehydrated Alfalfa has been the industry's "lead-pipe cinch" for quality and uniformity. Small's exactness and care at the many critical points of production have built brand reputation into Small's that feed manufacturers everywhere trust and insist on for their formula feeds.

When *you* next buy dehydrated alfalfa remember that Small's contains a whole "library" of highly important nutritional elements and gives you the quality and uniformity that make your brand of poultry and livestock feeds better.

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FOR FEEDS WITH A FUTURE

Small's dehydrated alfalfa

Egg Flock Slightly Under Year Ago; July Output Up

WASHINGTON—July egg production was 1% larger than in 1959, the U.S. Department of Agriculture says, with July laying rates higher than a year ago in all regions except the West.

Along with the increased laying rate, indications are that producers are keeping hens in production longer before slaughter. Both laying flock numbers and potential layers on Aug. 1 were below year-earlier levels.

Farm flocks laid 5,014 million eggs during July. Increases of 8% in the West, 5% in the south Atlantic and 1% in the south central states more than offset decreases of 6% in the north Atlantic and 1% in the west north central states. In the east north central region, July egg production was about the same as a year earlier. Aggregate egg production from January through July was 2% below the same period of 1959.

Rate Per Layer

The rate of egg production per layer in July was 18.11, compared with 17.88 during July last year. The rate of lay was above last year in all regions except the west, where it was down 2%, and the south central region where it was unchanged. Increases of 2% were recorded in the north Atlantic, east north central, west north central and south Atlantic regions.

Farmers had an average of 276,904,000 layers on hand during July —1% less than July last year. Decreases were 7% in the north Atlantic, 3% in the west north central and 2% in the east north central. These were nearly offset by increases of 9% in the west, 3% in the south Atlantic and 1% in the south central regions.

The number of layers on Aug. 1 was down 1%, totaling 275,487,000, compared with 279 million on Aug. 1 last year. Layer numbers were down 9% in the north Atlantic, 3% in the

(Turn to EGG FLOCK, page 122)

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Layers Kept Longer, Report Points Out

TRENTON, N.J.—Layers are being kept longer this year, and more are being force molted for another laying season.

This is noted in a recent Northeastern Poultry Producers Council report on the poultry situation in the Northeast.

Layers, it is pointed out, are being kept an extra month or six weeks.

While there have been some wide shifts in flocks, both up and down, in various localities, the area has about 4 to 6% fewer layers.

Regarding the replacement hatch and the cutback this year, the report said observers felt that in most cases the hatching reports reflected the chick output in their area. Some felt that the hatchery reports were low, but this may have been due to "imported" chicks.

The association observers' egg price outlook was for rising prices, with a top price in early October at about 50¢.

There was said to be still much discouragement among poultry growers, with a few looking for a graceful way out and at the same time salvaging their capital investment. At the same time, there were those looking for the money to expand their capacity.

Flock size, according to the report, is shifting. The averages shown by reporters are 35% of birds in flocks of less than 1,000, 36% in flocks of 1,000 to 5,000, 23% in flocks of 5,000 to 10,000 and 6% in flocks of more than 10,000.

MISS EGGtober — Jean Landry, 20-year-old Wisconsin girl, has been chosen by the agricultural division of Chas. Pfizer & Co., Inc., to lead its annual EGGtober campaign.

Wisconsin Farm Girl 1960 Miss EGGtober

NEW YORK—A Wisconsin farmerette has been named Miss EGGtober for 1960. Jean Yandry, a 4-H Club girl with a talent for poultry farming and homemaking, was chosen for the honor.

Miss Yandry, 20, hails from near Ft. Atkinson, Wis. She lives with her parents and helps them operate a poultry-dairy program when she is not busy attending the regular semester at LaCrosse (Wis.) State Teachers College. She is enrolled as a physical education major, with a bent toward teaching as a career.

This is the third year that a 4-H club miss has been named by the agricultural division of Chas. Pfizer & Co., Inc., New York, to spearhead its annual nationwide EGGtober campaign. The Poultry & Egg National Board will cooperate with Pfizer and other members of the poultry industry in bringing EGGtober to the attention of the general public.

As Miss EGGtober, the blue-eyed brunette will spend the next few months promoting eggs. She will urge the nation's consumers to eat more "Eggs — a Wise and Thrifty Buy."

As a national emissary for EGGtober, Miss Yandry brings local experience to her new assignment. In 1959, she reigned as Miss EGGtober in Jefferson County, an honor conferred upon her in local salute to "America's Egg Month" last fall.

Turkey Storage Buildup Shows Signs of Slowing

MOUNT MORRIS, ILL.—It appears that storage holdings of slaughtered turkeys are not building up quite as rapidly as expected, says the National Turkey Federation.

A larger-than-anticipated percentage of the early turkey crop may be moving directly into consumption rather than into storage. "This, plus a possible tendency on the part of buyers to lay in their supplies early," the federation observes, "may be contributing somewhat to a slightly better price situation than had been anticipated earlier. It is possible that some large users of turkeys, who delayed too long last year, may have decided not to be caught short this year. It is hoped this is the case."

The federation notes field observations which indicate there may be a tendency to hold birds (particularly heavy whites) to heavier weights rather than slaughtering them as fryer-roasters. "If this is true," says the group, "the anticipated heavy early slaughter may be delayed and the total tonnage of crop to be marketed in the last part of the year may be increased."

Ingredients Slip Into Low Gear

A vehicle running in low gear had the ingredient market as a passenger this week.

Observers couldn't say the market was completely on the weaker side, but the few comparatively minor items that showed any strength at all were slumped into the back seat by the sliding and sideways movements of the big volume commodities behind the wheel.

Soybean meal, usually considered in the driver's seat, took on a spot price this week that dropped to the lowest level of the season. Sellers were quoting the 44% version of this item at a decent price, but there was talk that actual sales were moving the tag down near the $40 ton, Decatur, mark.

Demand from feed manufacturers "isn't what it ought to be." And stimulating soybean oil prices are resulting in heavy runs of meal by processors pursuing the oil price advantage.

It was speculated here and there that feed business is currently slow because, except in parched regions in the west and the South, healthful rainfall has kept pastures in the green and because prospects point to plentiful supplies of feed grains.

Losses were marked up for middlings and bran this week. Flour mills in the Midwest were turning out wheat millfeeds in plentiful quantities, which seemed to more than offset some eastern reduction brought about by threatened and actual mill worker strikes.

Although animal protein feeds were reported to be shorter in supply, coinciding with decreased hog slaughter, tankage prices showed dips of $3@5 before the week was out, and meat and bone meal was down, too.

On the steady side were alfalfa meal and linseed oil meal.

Gluten feed moved up a couple of dollars this week. And brewers dried grains and stabilized animal fat showed advances.

Announce Program For Ohio Swine Day

WOOSTER, OHIO — Annual Ohio Swine Day will be held Aug. 19 at the W. L. Robison Swine Research Center of the Ohio Agricultural Experiment Station here. The swine center is located two miles north of Apple Creek.

The morning program will include tours of research projects including those on: Intermittent feeding of antibiotics, movement and sorting of pigs and dry lot performance, sex-influenced performance, adequacy of a vitamin supplemented and unsupplemented legume-free ration for gilts in dry lot, vitamin B_{12} requirement of pigs on pasture, obtaining pigs free of disease and plants for housing and equipment for swine.

The afternoon program will include the following talks: "Building and Equipment for Confinement Feeding of Hogs," D. G. Jedele, University of Illinois, Urbana, and "Disease-Free Pigs," J. D. Caldwell, University of Nebraska, Lincoln.

There will also be an afternoon program for the women.

Chicago Feed Club Sets Fall Golf Outing

CHICAGO — River Forest Country Club has been selected as site of the fall golf outing Sept. 13 of the Chicago Feed Club.

Other attractions will include $1,200 in prizes as well as a free bar. The golf committee, headed by A. H. Fahrenkrog, tested the course recently.

Research Indicates Broilers Do Better With Fewer Feeders

By Special Correspondent

GEORGETOWN, MD.—An experiment at the University of Delaware's broiler research farm isn't supposed to work but it keeps clicking every time it's tried.

During the field day at the farm more evidence was completed to indicate that best results are produced when the broiler grower uses only half the recommended number of 5-ft. trough feeders.

Frank D'Armi, in charge of the broiler trials, said that the recent trial is in direct agreement with three other recently completed experiments dealing with feeder space.

"Therefore we feel that we have sufficient experimental evidence to support the conclusions," he said.

It appears that broilers grow slightly better and utilize their feed more efficiently with less than the recommended amount of feeder space. The recommended feeder space is 20 5-ft. feeders to 1,000 birds.

Broiler growers saw pens with the average weight of 3.17 lb. and a feed conversion of 2.21 when half the recommended number of feeders were used. The recommended feeder space had an average weight of 3.08 lb. and the poorer conversion of 2.35.

This particular experiment has been a touchy subject in the broiler trade, the researchers admit. Growers have been compelled by contractors to use more equipment with the thought in mind that average weight, feed conversion and quality of the birds are better.

Another thing that makes this a touchy subject is the fact that the experiment deals only with 5-ft. troughs. The popularity of this type of feeder declined several years ago. Many of the growers use round, hanging feeders.

This experiment does not imply that half as many hanging feeders should be used.

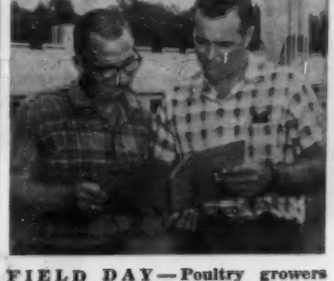
Mr. D'Armi plans to carry this experiment just a step farther. The birds will be graded for market quality and condemnations at the processing plant.

Delmarva depends heavily on sawdust and wood shavings for litter. During the winter months bad weather conditions frequently halt the mills. This makes it necessary for broiler growers to resort to other types of litter.

An experiment has been set up to determine the harmful effects brought about by various types of litter. Mr. D'Armi has grown the first flock in a series of four.

Broiler growers were told at the field day that results so far show that birds raised on peat moss litter have slightly heavier body weights. Birds on crushed corn cobs had the light-

(Turn to FEWER FEEDERS, page 122)



FIELD DAY—Poultry growers picked up considerable information at the University of Delaware Field Day held near Georgetown. Joseph Bethards (left), hatcheryman, and Robert Whaley, poultry serviceman, both of Carmean's Hatchery, Laurel, check the broiler research material.

NORTH CAROLINA

(Continued from page 1)

of poultry) said to make integration work in North and South Carolina all must work together to obtain contracts that are fair to the feed industry as well as to the grower.

"We must work out a program that will give a fair share of losses to growers as well as to the feed man. Some progress has been made along these lines in Alabama, Georgia and Mississippi. We, too, have made some progress," he commented.

"We should have more experienced people growing, work together with them, get a fair share of the profit and they (growers) must at the same time share some of the losses," he said.

Many Types of Agreements

While not specifically detailing contract terms, members of the panel did point out there are many types of agreements in the Carolinas, some of them good and some of them not so good.

Mr. Tilson pointed out the "new man comes into the business, many times offering a contract that is not good for either the producer or the feed man. These men will always get some of the business; there are always growers who will swing over to them."

This is why the industry needs more experienced men, more dependable people who will operate efficiently. He said that "perhaps the solution is to put the grower on a basis of sharing the losses as well as the profits.

"There are too many growers who are inefficient. They don't do anything about improving their operation. They know that if one mill won't take them, another will.

"We have got to develop good growers. If we don't, other systems will replace ours. The total-job companies will take over and it can hurt the smaller companies. I'd like to see the first system (better contracts and better growers) work," Mr. Tilson said.

"The passage of the small row farmer is one reason why integration has taken over," Mr. Taylor said. "He has seen his crop money disappear as farming becomes more mechanized and land is taken out of production. He has had to turn to other means of making a living and poultry production has looked good to him, especially if he can get financing.

"We have been trying to work out some safe plan to finance these farmers, but our greatest problem is efficient management on the farm. We've been trying to work out a plan based on the farmer providing the building, time, etc., with a guarantee on the feed conversion plan.

"Total integration requires unlimited capital and with it all I can't help but feel it takes from the farmer a feeling of responsibility toward his work and his farm. He's inclined to become careless and take a don't care attitude," Mr. Taylor said.

"If some plan is not devised for better production on a more sound business-like basis, then total integration may become more prevalent. The employees are paid on a straight salary basis from hatching to feeding to processing.

"If mills are unable to obtain this objective," he said, referring to better production and better contracts, "then this may be the end of small business."

"Share the Profits"

At the conclusion of the panel's discussion, members were asked from the floor how to go about getting better contracts and it was unanimously agreed the solution was to adopt a "share-the-profits" plan, make the grower something besides a "hired man" and make him more efficient.

Mr. Davis said size of the operation has a lot to do with the program and that too large an operation under certain conditions can get out of hand.

As to layer operations he ventured the opinion that "I'm not too certain integration is desirable" for this type of deal. "We're of the opinion hogs are not ready for it."

INTEGRATION—The North Carolina Feed Manufacturers panel which discussed advantages and disadvantages of integration at the annual meeting is shown here. Members are (left to right): James Westall, Earle-Chesterfield Co., Asheville, moderator; D. H. Taylor, Leco Feed Mills, Kinston; C. W. Tilson, Central Carolina Farmers Exchange, Durham, director of AFMA; Bob Davis, W. A. Davis Milling Co., High Point; and Tom Cameron, Upchurch Milling & Storage Co., Raeford.

The Fines Problem

Delivering of pellets in bulk trucks in the Carolinas has become something of a problem because of fines.

To combat fines, make a tougher pellet, advised Paul J. Husting, assistant general sales manager, California Pellet Mill Co., Crawfordsville, Ind.

"We might as well face it, handling pellets makes fines and more handling makes more fines," he said. He added that using air and screw conveyors to deliver to bulk bins where some of the pellets are fed by automatic feeders creates some problems.

"These fines are created by the disintegration of the pellet at the ends. The more times they are handled the greater are the chances that these ends will be rubbed, creating fines. So the logical approach must be to eliminate all the handling you can and then to control the essential handling so that the more objectionable elements are eliminated," he said.

Air handling is preferable to screw handling, if the rules are obeyed.

"When screw conveyors are used they are always installed in a manner that carries the pellets in a straight line. As soon as air enters the handling picture, though, the tendency seems to be to put in bends and angles without regard for the consequences. Every one of these bends and angles becomes a hammer attempting to destroy pellets as they hurtle by. High velocity air tends to add to the likelihood of pellet destruction. Comparatively low velocity air, however, will float the pellets, reducing this breakage to a minimum. The length of travel should always be held to a minimum," he explained.

Least breakage seems to occur in trucks of the drag unit type, but these are not so well-known in the South, he said. They are used mostly in the western areas.

Then he urged the members to reduce fines by making a good, tough pellet.

"Our work has proved that a far tougher pellet can be produced by applying all the steam we can get into the mash and increasing that mash temperature to approach 200 degrees. Getting the mash temperatures to approximately 200 degrees gelatinizes the starches in the ingredients making a more palatable and digestible product, but more important—producing, from a machinery standpoint, within the mash an adhesive quality that literally glues each minute particle to the other as the pressure is applied in the die," he explained.

Vitamin Potency

Mr. Husting devoted a considerable portion of his talk to the much discussed matter of loss of vitamin potency when high temperatures are applied.

"Certainly we make no claims as to having the answers, but this is the sort of thing we've checked pretty carefully with some highly qualified people in order to give you their latest thinking. The consensus is that only if the material is held at this temperature for a fairly prolonged period will any objectionable deterioration be experienced.

"Five minute exposure at 250°, for example, diminishes vitamin A somewhat, but this is the least stable of the vitamins," he said.

Quoting sources as authority for theories that high temperatures do a minimum of damage, he said more and more manufacturers are adopting the practice of operating at higher temperatures and moisture levels and making a tougher pellet, reducing fines.

There is a misconception, he said, about the matter of minutes elapsing between the time the meal enters the conditioning cylinder and the time it emerges from the pellet mill. The retention time within the mixing chamber on a standard 110 h.p. pellet mill is only 22 seconds. The time in the die is a little less than four seconds, making the total elapsed time only 26 seconds. Then there is the time consumed in bringing the material from atmospheric temperature to 200°.

Inventory control should also be considered and there is a belief, he said, that potency may suffer from too long a storage period.

Fat in Pellets

Mr. Husting also commented on fat addition in relation to production of a tough pellet. He noted that the only way fat can be added in quantity prior to pelleting and the quality of the pellet preserved is to use the whole soybean instead of soybean meal and added fat. Considerable experimental work is being done to perfect this process, but, for most mills, this is probably quite a way off and represents a fairly substantial investment.

The speaker reviewed developments leading to the announcement that a way had been found to add higher levels of fat successfully—that is, addition of the fat to the feed after pelleting.

"Make yourself a good, firm, tough pellet; cool it and then add the fat," Mr. Husting advised. "Give it a curing either for several hours in a bin or it can be accomplished by reheating and recooling and you wind up with a better pellet than you had before adding the fat."

One mill has installed a simple way of doing it and at a cost of only about $1,000. They've had it for three years and never spent a penny maintaining it. It's a measured feeding device dropping pellets into a slowly rotating drum into which a measured amount of fat is sprayed, he said.

Bulk Feed

Citing the results of a survey made on bulk handling, with emphasis on three unidentified mills, Howard J. Benson, associate director of the Eastern Federation of Feed Merchants and associate editor, Eastern Feed Merchant, told of advantages and disadvantages of bulk production.

One of the biggest problems today is the large discounts being offered to customers and many millers are seeking ways to reduce these discounts.

"Most dealers would like a $2 discount," he said. Discounts have ranged as high as $7 ton.

Credit is another problem and he urged dealers to "proceed cautiously with granting extensions of credit. Select the customers you want to sell this way. Be sure of their ability to pay," he said.

Another disadvantage of bulk deliveries is the dealers' inability to see customers as often as they should. The customers get deliveries more infrequently and show up at the dealers' places of business less often. Results have been a slowing down of sales of specialty items which dealers count upon for a nice margin of profit.

Of the three case histories he cited, none are specialized mills. One has had an operation in bulk for 18 months which was installed after a

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N. C. Allied Unit Elects Officers

ASHEVILLE, N.C.—W. T. Houston, K. S. Crittendon, Inc., was elected president of the North Carolina Feed Manufacturers Allied Assn. at its annual convention here.

Three vice presidents were named this year. They are: W. F. Tomz, American Molasses, Wilmington, N.C., first vice president; Francis Lentz, Harris-Crane, Inc., second; and Robert Segars, McKesson & Robbins, third.

M. Clyde Griffin, Griffin Brokerage Co., was chosen secretary-treasurer.

The manufacturers division of the association was not scheduled to elect officers at this meeting. They are chosen at the fall meeting.

Two new directors were added to the allied group. They are Louis J. Dye, Nopco Chemical Co., and H. M. Metzner, Amburgo Co. The retiring president W. A. Fuller, Morgan Brothers Bag Co., Charlotte, automatically becomes a director.

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year spent visiting mills throughout the country. This mill, a small one, spent $50,000 in converting, after talking it over with the local banker. The bank agreed to amortize the loan over 10 years and the operator figures to pay off in 5, figuring to save on such things as $2.80 on bags, reducing labor force by one man at a savings of $4,000 along with other economies.

Instead of buying a bulk truck which would have cost him $7,000, he is hiring a man to make the deliveries.

"This mill is proceeding cautiously on credit to customers and is not encouraging new customers on bulk. The operator is waiting for them to come to him. He figures his annual growth at 10 per cent on bulk," Mr. Benson said.

The second mill, he said, produces 25,000 tons annually. He is giving an extra large discount; agrees it is too high and hopes to level off at not more than $4 ton, in six-ton lots. With an automatic production, he was able to drop two men and he gets his grain in hopper cars which he figures saves him money, too.

The third mill has a production of 10,000 tons. He reduced his manpower by one man at a savings of $3,500, bought some new equipment, although the mill isn't built for mechanization because it is 50 years old. This mill is located in a competitive situation with 12 mills in the area and the operator bought a truck and converted to bulk slowly.

"He wanted to cut the discount rate, but found difficulty doing so. His banker, when approached on the subject of credit, pointed out something that caused him to think. The amount of credit receivables would double overnight on the basis of bulk deliveries as compared with the old methods," Mr. Benson said.

Faster Consumption

It has also been the observation of many in bulk that consumption of feed has been faster when customers take bulk. He cited an instance of a dairy with 40 cows where the owner asserted feeders handed out more feed because it was there in large lots.

Referring back to headache of discounts, he said, one Pennsylvania dealer is trying to sell his customers on the idea they are not entitled to discounts and that bulk is actually a convenience to the customer and not the mill.

Too many dealers, he said, do not have proper cost figures on the operation of trucks.

"Not many dealers can tell you just how much it costs to operate a truck and it is an important factor," he said.

The man on the truck becomes an important figure in bulk sales. Since the feeder doesn't come into the store as often, the driver must be a good salesmen and a good front man.

Dr. H. Brooks James, dean of agriculture, North Carolina State College, pointed out the rapid strides agriculture and business are making toward bringing new products to the front.

Thirty seven per cent of all employed people in the nation are employed in either farm work, processing or marketing farm products in one form or another. Sixteen million people are working to help eight million farm workers, he said.

Urging feed people not to be timid about developing innovations, Dr. James E. Gates, dean of the college of business administration, University of Georgia, pointed out how many modern day innovations have been brought out because people had the desire to bring forth new ideas and new products.

The group's 1962 convention will be held again at Grove Park Inn, Asheville. The date will be Aug. 10-11. Next year's sessions will be held at Virginia Beach, N.C., at the Cavalier. The date is Aug. 24-26.

Ohio Firm Formed To Store Alfalfa

TOLEDO, OHIO — Ohio Blenders, Inc., has been formed here for inert gas storage of alfalfa pellets. The firm is a consolidation of five alfalfa dehydrating plants which will pool their entire production of alfalfa pellets to be blended, stored and sold under the one firm name.

By this consolidation, the firm hopes to make alfalfa products uniform in color, grind and texture and available throughout the entire year.

Ohio Blenders, Inc., has purchased the property of the Continental Grain Co., Toledo. The site, located on two railroads, has easy access to turnpikes for truck shipments and has 322 ft. of deep harbor dockage on the Maumee River, officials report. The plans are for operation to begin by Jan. 1, 1961. Capacity of the plant will be 30,000 tons annually.

Plants participating are Verhoff Alfalfa, Ottawa, Ohio; Yarnell Bros., Inc., Deshler, Ohio; Napoleon (Ohio) Alfalfa, Inc.; S&W Mills, Inc., Archbold, Ohio, and Toledo (Ohio) Alfalfa Mills, Inc.

Ray Verhoff was elected president of the firm; Richard Yarnell, vice president, and Rolland Turnow, secretary-treasurer, at the annual directors' meeting.

Soybean Processors Set Meeting Plans

MEMPHIS, TENN.—Plans for the 1960 annual meeting of the National Soybean Processors Assn. and Advisory Board, National Soybean Crop Improvement Council, Aug. 22-23 have been announced.

Among the talks on the opening day's program will be "Agri-Business in the Midwest," by Darrell R. Francis, Federal Reserve Bank, St. Louis, Mo.; "The Soybean Council's Global Program," Howard L. Roach, president, Soybean Council of America, Inc., Waterloo, and "The European Operations of the Soybean Council," Fred R. Marti, director of overseas operations, Soybean Council of America, Inc., Rome, Italy.

Among the featured talks on the second day's program will be "What Will We Get for 1960-Crop Soybeans?" by Dr. T. A. Hieronymus, University of Illinois, Urbana, and "The Factors Affecting Soybean Prices," featuring six panelists in a discussion.

General Mills Tells Of District Merger

SAN FRANCISCO — The Sperry (western) Operations of General Mills has announced a change in its feed sales organization and appointment of Russell E. Wrigleswortth as sales manager for the new, enlarged sales district. The new district, to be known as the Washington district, combines the former Tacoma-Spokane districts.

R. E. Wrigleswortth

Mr. Wrigleswortth has extensive feed sales experience in Washington, the last 19 years with General Mills. He was with the company's feed store sales operations and from 1946 until 1958 he managed the South Tacoma store. Since that time he has been the Tacoma district sales manager. Prior to joining General Mills, Mr. Wrigleswortth was associated with the Kenworthy Grain & Milling Co. in South Tacoma.

C. G. (Bud) Wales, who was sales manager in the former Spokane district, will take on a new assignment as field manager for eastern Washington.

USDA Sets '60 Corn Support Minimum

WASHINGTON—The U.S. Department of Agriculture announced 1960 crop corn county minimum price-support rates.

The rates are based on the 1960 minimum national average support price of $1.06 per bushel. The method followed in determining rates is the same as in previous years. Relationships among the rates for the various counties are unchanged from those for the 1959 program, except for a minor adjustment in one county, USDA reports.

The rates announced reflect a 6¢ bu. reduction from 1959 rates due to the lower 1960 support price. The support price in 1959 was $1.12 bu.

These minimum rates will not be reduced but may be increased if the final 1960-crop corn support price as determined on the basis of data on Oct. 1 is higher than the minimum price announced in February.

Burrus Continues to Control Cuba Holdings

DALLAS, TEXAS — Jack P. Burrus, president of Burrus Mills, Inc., says his firm's multi-million-dollar holdings in Cuba still remained in the company's control this week despite the latest expropriation of American investments by the Castro government.

"As of 9 a.m. Monday, our flour and feed mills there were still operating under our management, and they were not included on the list of expropriations announced by the Cuban government last Sunday," Mr. Burrus said.

CROTALARIA

(Continued from page 1)

cussion as to what should be done about the matter.

Crotalaria has been grown in Florida for a number of years for soil conservation and improvement, and feed mills are refusing to buy corn that contains even a small amount of the seed.

Mr. Thompson said the state department has recommended that farmers abandon crotalaria as a cover crop. However, it is difficult to eradicate the plant completely from a field, he said. Seeds may lie dormant for several years, then germinate and reproduce. For several years, therefore, volunteer plants may come up.

The seed is particularly dangerous to poultry, and tests show that a toxic condition may exist within a range of 0.1% to 0.01%. Poultry experts have not come to any definite conclusions as to just how much is toxic.

The seed has become difficult to handle by corn buyers especially since there has been an increased use of combines and picker-shellers in corn areas of southern Georgia and Florida.

Mr. Thompson urged dealers in corn to be sure the grain is properly cleaned before it is processed into feed.

Georgia millers are giving serious consideration to installing cleaning equipment, if they do not already have it, in order to prevent the seed from showing up in poultry feeds. One south Georgia mill has already bought cleaning equipment for the purpose.

Corn dealers in both states have reported buyers turning down shipments because of a small substance of the seed.

Crotalaria was brought into the South during the depression days as a cover crop and is fairly well known in Georgia, South Carolina and North Carolina as well as Florida.

Most of the trouble has arisen mainly because of increased use of mechanized machinery in harvesting. Previously, when corn was processed by hand the dangerous seed did not show in the corn sold to dealers.

Ingredient Meeting Speakers Named

BURLINGTON, WIS. — Annual meeting of the National Feed Ingredients Assn. will be held at Liggett's Holiday Inn, Brown's Lake, here Sept. 14-16, it has been announced by William E. Noble, Oelwein, Iowa, president of the group.

Dr. G. K. Davis

Program for the meeting will include the following speakers: Dr. Robert Spitzer, Murphy Products Co., Burlington, Wis.; Armand J. Gariepy, Sales Training International, Barre, Mass.; and Dr. George Davis, University of Florida, Gainesville, Fla. A representative of the Food and Drug Administration will be present to answer questions.

Dr. Davis will discuss the accumulation of radioactive isotopes within humans and in animals.

"Against the background of concern over accumulation of radioactive isotopes within humans and in animals," says Dr. Davis, "the feed industry is in a very important position and also a very sensitive one with respect to control of intake of these materials by animals. Since animals provide humans with considerable amounts of food, the accumulation is significant.

"The feed industry has been placed on notice that it may have to know the level of radioactivity in feed ingredients in order that it may protect the farmer from unexpectedly high levels of radioactive isotope accumulation especially in milk, meat and eggs.

"While the finger of suspicion has been pointed against certain feed ingredients, it is equally pertinent to point out that the feed industry provides one of the main bulwarks against radioactive isotope accumulation and therefore radiation hazard both to animals and to humans."

Included in the family-type meeting agenda will be special programs for the women. There are also recreational activities for delegates to the meeting and the delegates' families.

Terramycin-Vitamin Crumbles Introduced

NEW YORK—A new product designed to fight livestock and poultry diseases, Terramycin A/D Fortified Crumbles, has been introduced by Chas. Pfizer & Co., Inc.

The new product combines the disease-fighting qualities of the broad spectrum antibiotic with qualities of vitamins A and D, Pfizer spokesmen say.

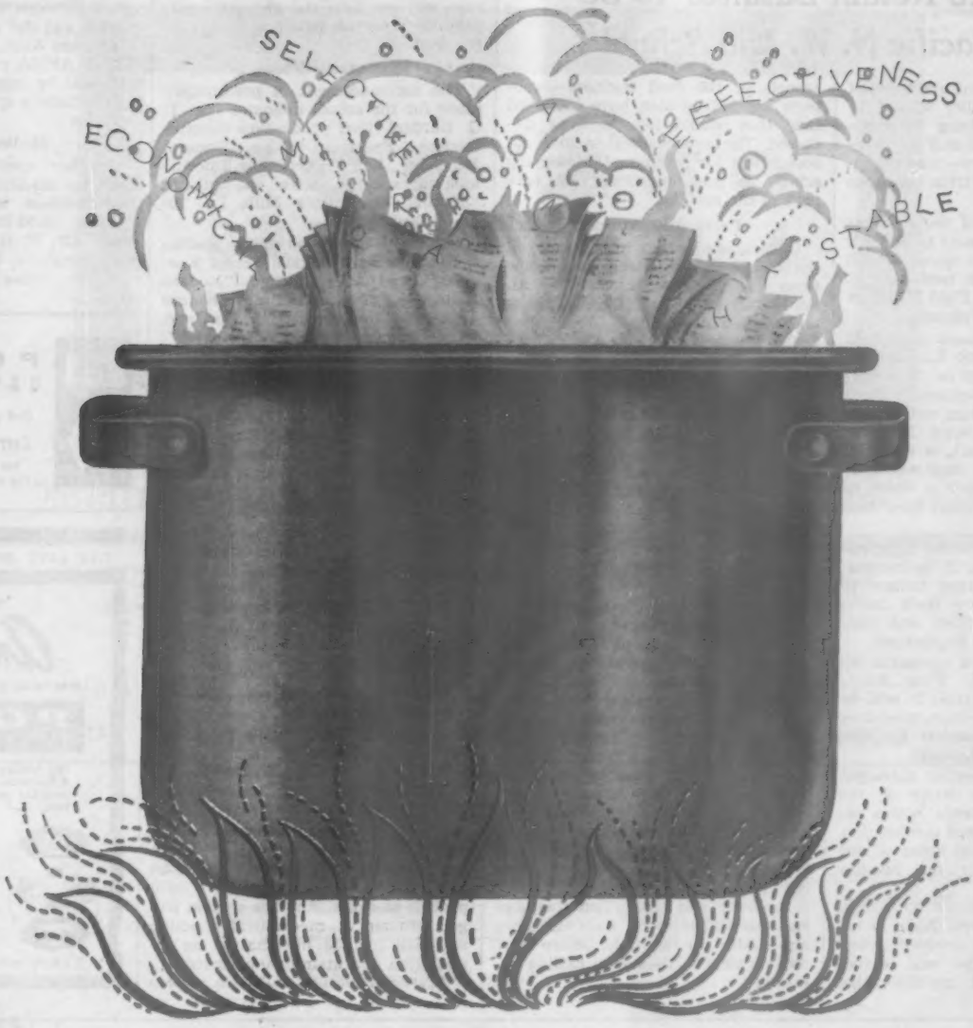
The large amounts of Vitamin A included—160,000 units per pound—are a special feature of the new product, they say. The product's vitamin A content "will give additional resistance when stress hits or disease threatens to tear down vitality and health."

The vitamin A addition is designed for one thing, to aid in making up for any shortages that may exist in cattle coming into the feedlot.

The vitamin D in the new product, 16,000 units per pound, will help support bone development and assimilation of calcium and phosphorus by the animal.

Terramycin Crumbles will be sold over the counter in retail farm and feed supply stores across the country. "It will offer improved disease control advantages to producers of beef cattle, hogs, lambs, dairy calves, turkeys, broilers, mink and egg-producing flocks," say Pfizer spokesmen.

The new product is being offered in a 50-lb. bag designed in the red, yellow and black colors associated with the firm's animal health line. To use, producers will top dress or mix the crumbles into their feed.



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'Modernize to Retain Business' to Be Theme of Pacific N. W. Mill School

SEATTLE—Just what are some of the things a feed miller should be thinking about and doing to retain business in the face of stiff competition within the industry—plus the increased competition from on-farm feed mills?

Of course, not all of the answers are clear-cut, but answers to at least certain aspects of this question will be offered to western feed men at the Pacific Northwest Feed Mill Production School next February.

The theme of the school, to be held Feb. 8-9 at the Hotel Leopold in Bellingham, Wash., will be "Modernization to Retain Business." Feed men will get suggestions and advice on modern mill operations. The program, officials point out, is designed to help feed millers improve their operations and efficiency in order to do a better job and retain their role in agriculture.

Because of the increased competition from farm mills, it is increasingly important for feed millers to modernize and improve their facilities and their production and handling operations, it is emphasized.

The annual school is sponsored by the Washington State Feed Assn., headquartered in Seattle. It will be held during the two days preceding the association convention on Feb. 10, also at the Hotel Leopold.

J. G. Wilson, association manager, has pointed out the theme of the school and its importance in this era of change and increased competition, and he has announced some of the preliminary plans for the two-day school.

The school will include both talks and work-shop sessions. Also, in addition to the strictly production topics, the program also will include some discussions of certain other aspects of the feed business — subjects which feed men have indicated that they would like to hear discussed. The sessions will include opportunities for persons attending the school to pose questions and take part in the sessions.

Farm Mill Threat

Underscoring the importance of the school and improved mill operations was a recent statement by Allen Baker, supervisor of feeds, grains and chemicals in the Washington State Department of Agriculture. (Feedstuffs, July 23.) Mr. Baker warned that "if confidence in the feed trade continues to degenerate, you will see feeder-owned mills, fewer feed millers, fewer feed customers and the survival of only the millers with enough financial resources to outlast their competitors." The control official presented his views of why more feeders are turning to on-the-farm feed mills, and he outlined certain suggestions for the feed miller to retain his business.

While he did not comment on mill efficiency specifically, his comments related to the theme of the 1961 Pacific Northwest school and the efforts to retain business.

Among other things, Mr. Baker noted that while the farmer who gets into his own milling operation will run into many unexpected costs and headaches, and possible problems with additives, this farmer will be lost as an industry customer for a long time once he is committed to an investment in an on-farm mill. Therefore, it is especially important that feed millers take all necessary steps to improve and strengthen their operations and services, their efficiency and quality, at this time, before more feeders turn to their own milling operations.

The school on Feb. 8-9 will cover various phases of mill operation and also will get into the currently important topic of handling drugs in the mill.

Program Plans

The announcement of preliminary plans for the school indicates that T. G. Burdsal, feed production superintendent, Sperry Division, General Mills, Inc., San Francisco, will be the kick-off speaker, with the subject "Making Yesterday's Mills Do Today's Business."

Other speakers and their production topics will include Gerald Karstens, Feed Age, Chicago, "Modern Mills West of the Rockies"; Leonard Thompson, Reid-Strutt Co., Portland, "Air vs. Mechanical Conveying"; Wins Hall, Pacific Molasses Co., narrator for a movie, "How to Solve Molasses Handling Problems."

Walter Krumbholz, Leo Cook Co., representative for the Ray Ewing Co., will discuss "Handling Drugs in the Mill." Roy H. Stutzman, Panogen Co., Chicago, will cover the topic "Mill Sanitation — Compliance with FDA."

Also, Al White, Bowles-White Co., Seattle, will speak on "Customized Insurance for the Feed Business." A new movie provided by the Conveyor Equipment Manufacturers Assn. will be another part of the program.

Workshop Sessions

A special part of the school will be five workshop sessions. These will include certain topics other than feed milling, in addition to the usual production subjects. Mr. Wilson pointed out that many feed millers have asked for some of these other topics.

One of the sessions, moderated by Mr. Burdsal, will be called "Open Season." Any mill problems can be presented, and several experts will provide answers. Another session will get into air vs. mechanical handling and will include information on installation and maintenance costs.

A special feature will be a session on "Public Relations at the Grass Roots Level." This session is a joint effort between the Washington association and the American Feed Manufacturers Assn., Chicago. Richard L. Kathe, AFMA public relations director, will be moderator. The session will include a special visual aid presentation.

Medicated Feeds

Another special feature, dealing with the medicated feed-federal control problem, will be a session on "Drugs, Additives, the FDA and You." Dr. H. S. Wilgus, Ray Ewing Co., Pasadena, Cal., will be modera-

(Turn to page 14)

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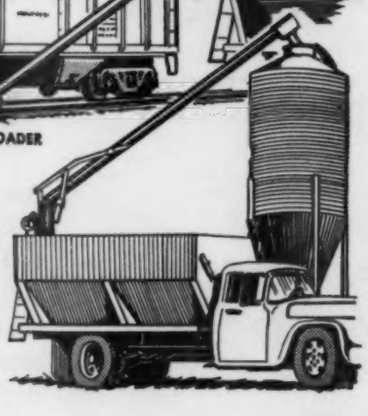
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Make your feeds sell better. For chickens . . . Serpasil relieves stress . . . shown by increased egg production and egg quality as compared to controls during heat stress. Based upon field trials in Arizona, egg producers may get as many as 140 eggs more per hundred birds during one summer . . . from quieter, healthier birds. For turkeys . . . Serpasil stops aortic rupture; 1 ppm in the feed for 5 days followed by lower levels for the remainder of the major growth period has been shown to provide *quick control* of this serious economic disease. Prophylactic treatment at lower levels has also been shown desirable in areas where the disease is prevalent. *File your new drug applications. Kits are available from your salesman or write:*

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NEW CARTON — Poultry farmers feeding Pay Way Golden Yolk Egg Feed will soon be able to market their eggs in this new black and yellow egg carton. Manufactured by Pay Way Feed Mills of Kansas City, Golden Yolk Egg Feed was introduced in the company's six-state area last fall. Pay Way officials report that the reception of the new product has been so good that they have decided to make the egg cartons available to producers as a farm service. Cartons will be distributed by Pay Way dealers.

tor, and several other experts also will take part, Mr. Wilson announced.

Mr. White will moderate a session which will get into all phases of insurance. This session will be called "Insurance—Prepaid Losses—Touching All Bases."

Mr. Wilson indicated that other program features also are in the planning stage. At the same time, he called particular attention to today's problem of retaining business in the face of increased industry and on-farm mill competition.

School officials urged that feed men turn increased attention to this and related problems, and they pointed out that the next school is designed to help meet some of these problems.

TWO BURGLARY SUSPECTS

ROCHESTER, N.H.—Two 15-year-old boys were taken into custody by police here in connection with several burglaries at Conrad's Feed & Supply Store and the concession at the Little League Field.

Kansas City Millwright Tells of Appointments

KANSAS CITY — Appointment of H. E. Prescott, Donald P. Case and W. A. Timmons, Jr., to the Kansas City Millwright Co.'s newly-enlarged feed mill division has been announced by Frank Betton, president.

The division is now supervising the construction or modernization of feed mills in Georgia, Florida, Colorado and Texas.

"These three men represent substantial experience in the engineering and materials handling fields and have been instrumental in the design and development of pre-engineered push-button package mills," Mr. Betton said.

Feed Mill Designer

Mr. Prescott, formerly vice president of Aero-Bulk Manufacturing Co., went to that company from J. W. Williamson & Son of California, where he was a director of the company and designed many feed mills now in operation throughout the country. Previously, as chief engineer of Golden State Co., Ltd., he designed and built the largest whole-milk drying plant in the world. Mr. Prescott is a registered mechanical and chemical engineer with 30 years of experience in food and feed equipment engineering.

H. E. Prescott

Frank Betton

W. A. Timmons, Jr.

D. P. Case

Donald P. Case, Sr., also came to KCM from Aero-Bulk, where he was chief of the engineering department. Mr. Case has designed, detailed and supervised the erection of feed mills, grain handling plants and mine mill installations. He holds several patents on automatic equipment and, in addition to his regular industrial work, has done considerable top secret engineering work for the Army research and development laboratories at Fort Belvoir. Mr. Case formerly was associated with W. C. Wiedenmann & Son, Kansas City, and with Allison Steel and Dale Benz, Inc., Phoenix.

W. A. (Al) Timmons, Jr., served as sales engineer in an eight-state area for Shanzer Manufacturing Co., grain dryer, San Francisco, before taking the presidency of the Timmons & Evans Co. two years ago.

A native Texan, he has had considerable experience as a design draftsman, field engineer and project engineer, following three years of service with the U.S. Merchant Marine. Mr. Timmons has been associated with the D. L. Walters Construction Co., Amarillo, builder of grain elevators and feed mills, and also with Continental Carbon in that city. His experience includes engineering services for the G-R Machinery Co. and for Atlas-Pacific Engineering Co., both in California.

"With the addition of these three men in the feed mill division, Kansas City Millwright now offers extended services in the design and construction of feedlots and feed mills of every type," said Mr. Betton.

Burlap Council Sets Radio Bag Promotion

NEW YORK—Burlap will be on the air with a series of spot announcements from key stations in selected feed consuming markets. Commercials will be beamed at feed users and feed dealers and are designed to stimulate consumer demand for feed in returnable burlap bags.

The farm directors of eight radio stations in key feed areas in the Midwest and Southwest will give the burlap story on their early morning programs each weekday and will offer a new pamphlet on "How to Care for and Cash in on Returnable Burlap Bags" to the listening audience.

This large scale promotional program is sponsored by the Burlap Council, stated William A. Nugent, vice president, as part of the council's continuing effort to promote the use of returnable burlap bags in the feed industry.

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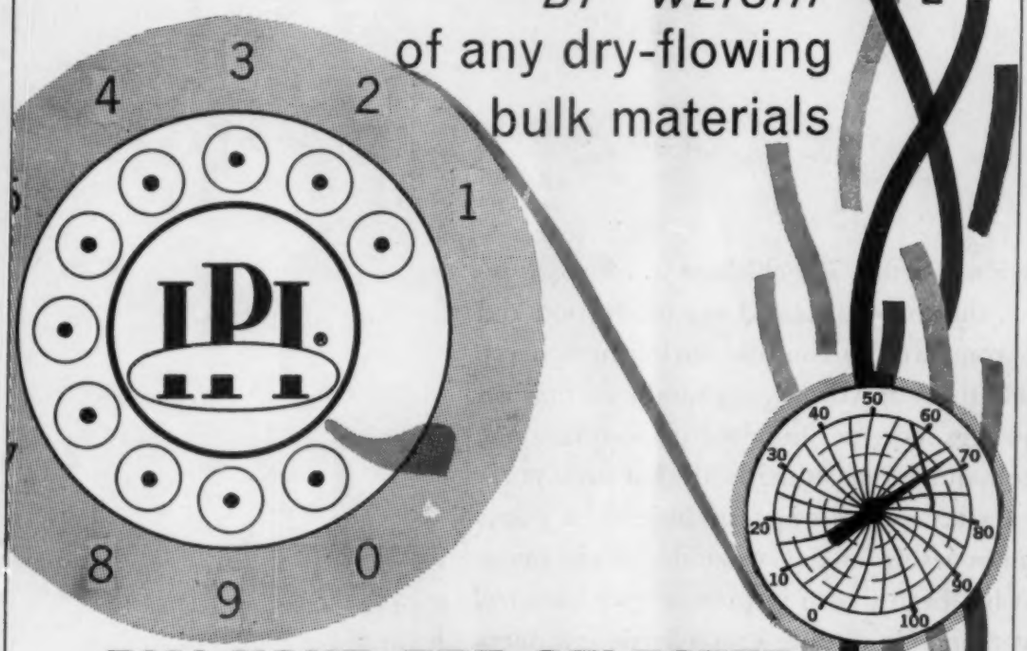

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Coarse Grains	1/40, 2/50 = 140#	1/50, 1/70 = 120#	Reduced breakage; save $3.30 per M	1/50, 1/60 = 110#	Less breakage; save $6.60 per M
Small and Medium Pellets	3/50 = 150#	1/60, 1/70 = 130#	Reduced breakage; save $1.65 per M	1/50, 1/70 = 120#	Less breakage; save $6.60 per M

During a controlled research program to determine possible savings in bag costs, various WONDERWALL constructions were tested by 53 packers who shipped 57,263 tons of feed in 2,290,522 WONDERWALL bags.

Result of this laboratory and field proving was the development of new, superior constructions for all types of feed bags.

Two of the new constructions are shown in the box with their benefits. Similar economies are obtainable with other sizes and with white outer sheets.

Secret of WONDERWALL strength is Kraftsman Clupak* extensible paper. Its built-in stretch withstands far more impact without breaking than conventional natural kraft. In a WONDERWALL, fewer or lighter plies are needed to do a better job.

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Our technical service experts are ready to help you. Call or write Multiwall Bag Division, West Virginia Pulp & Paper Company, 230 Park Avenue, New York 17, N.Y.

*Clupak, Inc.'s trademark for extensible paper manufactured under its authority and satisfying its specifications.

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Federation Advises Cautious Approach To Estimating 1960-61 Millfeed Returns

CHICAGO—"Any realistic appraisal of the 1960-61 outlook shows there are unmistakable signs of need for extreme caution in estimating returns on millfeed this year," says the Millers National Federation in a bulletin issued this week.

Some of these "signs," as outlined by the federation, are:

- A steady increase in feedstuffs supplies.
- Forecasts of fewer pigs in 1960, a slow-down this fall in the cattle population buildup and an over-all reduction in poultry numbers.
- As supplies of feed grains and feed ingredients have increased, values have dropped.
- The trend toward high energy-low fiber feeds continues.

Federation spokesmen believe that, in light of these trends, "conservatism in evaluating returns from millfeed in the coming crop is a must if millers are to avoid another year of fiscal purgatory."

Growing Grain Stocks

"The Hook-Up," a publication of the federation, notes that April 1 stocks of the four feed grains set a new record—10% above the same date a year earlier and up a like percentage on an animal unit basis. Another good feed grain crop is forecast for this year.

"Without belaboring statistics as to prospective harvests and usage," the publication comments, "let's simply note that the U.S. Department of Agriculture states that 'a substantial increase in the Oct. 1 carryover is in prospect.' "

Regarding animal population trends, the Millers National Federation says this:

"We have all noted: (a) The USDA estimate of a spring pig crop of 9½ million less (16% reduction) than the 1959 spring figure, with an over-all decrease of 11% forecast for 1960 vs. 1959; (b) U.S. cattle population is now in excess of 100 million head for the first time in history, and the build-up is now in its third year and is expected to slow down this fall, and (c) there is an over-all reduction in poultry numbers, also reported by the USDA as of June 1. In terms of laying hens, the federation observes, the reduction is as much as 4-6% in northern and central areas—offset to some extent by a 9% increase in western states."

Declining Values

Reductions in feed grain support prices, the federation says, have been a factor in declining values of feed grains and feed ingredients. The national average price support rate of corn, for instance, has dropped from $1.36 for the 1958 crop year to $1.06 for 1960. A reduction of 30¢ bu. in corn is equivalent to $10.71 ton, the federation notes.

"The bell cow of protein items, 44% soybean meal (bulk, Chicago), shows a similar trend with May values for this year at approximately $58.50 vs. $60 and $62.60 in the two preceding years," the federation observes. "The trend on millfeed is not so readily apparent by reason of the mid-winter bulge we enjoyed in 1958-59, but the following average figures on bulk middlings (Kansas City) are indicative: 1956-57, $37.50; 1957-58, $31; 1958-59, $34.50 and 1959-60, $32."

Further Analysis

The federation continues its millfeed prospect analysis:

"Recent trends in the formula feed industry (the major outlet for millfeed) don't augur well for improvement in the millfeed price outlook. The trend toward high energy-low fiber feeds continues its expansion. The place of millfeeds as an ingredient in a bag of complete formula feed has shrunk in fairly recent years from something over 30% to an average of under 15%.

"The formula feed buyer is more than ever before evaluating the ingredients he purchases on a nutritional appraisal of protein and energy in each ingredient.

"How does millfeed compare on such a basis? On protein, with 44% soybean meal at $58, bulk, Chicago, and wheat middlings (16% protein) at nominal value of $35, bulk, Chicago, which would you buy?

"On a productive energy basis, corn is rated at 1,145 calories per pound, compared with wheat middlings showing 520 calories per pound. In late June, Minneapolis No. 2 yellow corn was selling at around $39 ton vs. middlings at $32 ton. If productive energy is the yardstick, which is the better buy?

"Of course, there are other factors which a buyer will consider, but the trend is definitely in this direction as indicated in a recent speech by one of the buyer managers of a large formula feed manufacturer."

"Country Mixing"

Millers National Federation recognizes the trend toward mixing formula feeds "in the country where the buyers are and where supplies of local grains are available."

This movement, the federation observes, has been one of abandoning or reducing the output of larger and older plants in terminal markets and building small, highly efficient push-button plants near major consumption areas.

"This has emphasized the fact that country grains can be bought at 'market less freight' whereas millfeeds cost is valued at 'market plus freight'," the federation notes.

"In addition, few if any of these newer and smaller plants are equipped with any considerable amount of storage space. Buying of ingredients is thus geared closely to production needs.

"Since most of the millfeed tonnage today moves in bulk and few, if any, new flour mills have any bulk millfeed storage space, the tendency is to accentuate the fluctuations in millfeeds, more often on the downside than otherwise."

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Hoffman-Taff, Inc., Tells of Promotion

SPRINGFIELD, MO.—Animal nutrition division of Hoffman-Taff, Inc., has announced the transfer of Verne Drennen, Kansas City, from the position of midwest sales manager to the staff of the company's home office here.

P. F. Wertz, manager, said Mr. Drennen will be in charge of all sales of the animal nutrition division made to and through distributors. Mr. Drennen already has assumed his new duties in Springfield.

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High-energy broiler rations must be fortified – for best results – with high-quality micronutrients, including the all important – vitamin B_{12}.

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Remember: The incidence of multivitamin deficiencies in high-energy rations may be more prevalent than that of single vitamin deficiencies. Be sure to check ***all*** your vitamin levels – including B_{12} – when you formulate your broiler, starter and grower rations – there is a specific Merck potency to fit your needs.

Still looking for an effective, low-cost antibiotic supplement? Set up a split-pen feeding trial with PRO-STREP® and demonstrate—with on-the-farm results—how PRO-STREP can pay off for you and your growers. The next time you order a Merck custom premix, be sure to include NICARB® or GLYCAMIDE®...and help give your broiler rations "built-in" coxy protection. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

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B12

...uniformity and quality...

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MILKHOUSE—This view of the physical plant of Modern Dairy Farms, Inc., cowtel located near Montrose, Iowa, shows the milkhouse and garage holding a milk tank trailer. Above the milkhouse (right), is storage for 22 tons of feed.

Iowa 'Cowtel' Adding Facilities To Expand Cow Capacity

By Al P. Nelson
Feedstuffs Special Writer

An expansion program at the "cowtel" operated by Modern Dairy Farms, Inc., near Montrose, Iowa, is now under way to increase capacity from 300 to 600 cows, according to Herbert L. Freel, president. Housing, feeding and milking facilities are being added to care for the additional cows.

"When we built our quarters a year or so ago, we planned for such expansion," said Mr. Freel. Since the cowtel did not operate at full-rated capacity the first year, doubling of the number of cows will not require doubling of the number of buildings and pens, he explained.

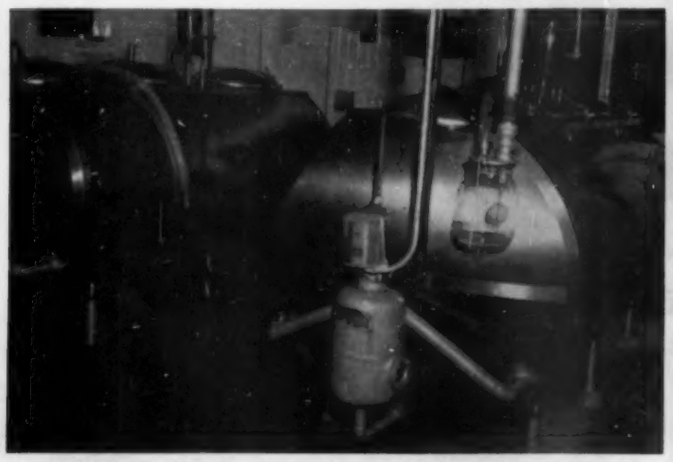
Built at a cost of $125,000, the cowtel, so named because it accommodates the cows of customers on an individual herd rather than on a pool basis, has a 45 by 88-ft. concrete lot for each herd of 25-30 dairy cows, including a 16 by 56-ft. hay storage and feeding area, with an adjoining 40 by 45-ft. loafing area. At milking time, a herd is moved into a covered holding pen at the end of one of two four-stall milking parlors. As the cows come through the parlor to be milked they are checked for physical condition and any requiring attention are sent to the combination maternity and treatment barn for care before being returned to the pen.

Only cows with an annual production of over 10,000 lb. of milk and 350 lb. butterfat are admitted to the cowtel, states Mr. Freel. A cow producing 12,000 lb. of milk will return the owner about $135 a year. Of the 10 herd owners who have contracted for cowtel housing and care, seven are young farmers and three are engineers who have farm backgrounds.

22-Ton Holding Bin

Mr. Freel feeds the cows a 16% Wayne dairy ration. This is bought from Pen City Feed & Supply, Fort Madison, Iowa, and trucked to the cowtel every week in seven ton loads.

"COWTEL"—Dairy animal quarters and milkhouse area of Modern Dairy Farms, Inc., Montrose, Iowa, are shown above.



STORAGE—Milk storage tanks for the milk pipeline system of the Modern Dairy Farms, Inc., cowtel are shown here.

FEEDING AREA—This view shows the pens for various dairy herds staying at the cowtel. Hay feeding area can be seen at the center of the pens.

This feed is augered into a 22-ton holding bin above the milking parlor. Mr. Freel figures he will need the full capacity of this large feed bin when the cowtel population increases to 600 cows.

He feeds each cow according to milk production at the rate of 1 lb. of dairy ration to 4 lb. of milk. The cows are also fed alfalfa and brome hay in outdoor feed lots.

Last January, Mr. Freel's record revealed that it cost $39.69 per cow for service fee, roughage, bedding, veterinarian service, concentrate, hauling, DHIA and breeding. This was the high cost month of the year. Total costs in October, November and December amounted to $35 per cow per month. Of this total, roughage amounted to $12.65 and concentrates amounted to $7.28 per cow during January.

The feeding of fresh, chopped forage in summer is expected to bring the cost of feed per cow down $5 @6 per month, he says. Two silos are being built to help with the winter silage cost problem.

In January the 10 herds under Mr. Freel's management produced just under 37 lb. of butterfat per cow, according to DHIA test. One herd, early in lactation, produced 44 lb. per cow. The lowest herd produced 25 lb. per cow.

When cows are approaching or in the dry period they are kept at the cowtel where they can be properly conditioned. This also cuts down on the incidence of disease, Mr. Freel reports. He said that illness among cows in the herds has thus far been no problem.

Entrance Requirements

Before a herd is accepted in the cowtel program, Mr. Freel asks for a veterinarian's check for brucellosis, tuberculosis and leptospirosis. The cows must also be vaccinated for leptospirosis.

When the herd is moved to the cowtel, it is put in an isolation pen for two weeks. This is an additional precaution against any disease outbreak.

The farmer who wishes to put his herd into the cowtel must have between 25-30 cows, each of which must produce a minimum of 10,000 lb. of milk. The herd owner also pays $12.50 per month per cow to Mr. Freel for a grade A guarantee on the milk price for labor, buildings, management and other services.

The owner is billed monthly for feed for each cow, hay and bedding. The owner may provide the hay and bedding if he wishes, but few of them do.

A carefully supervised feeding program is devised for each cow, says Mr. Freel. She carries a neck chain number and a colored tag which shows how much feed she is to receive. When a cow has just freshened, she gets 14 lb. of corn and oats and 16% dairy ration each day. This ranges down to three lb. of dairy ration per day for dry cows.

Under a cowtel contract a herd owner may keep his calves or authorize Mr. Freel to sell them. If a farmer takes his calves home his return from the cowtel will be about 15%. If he authorizes the cowtel to sell them, his return will be about 20-25%, says Mr. Freel. Bull calves are generally sold right from the cowtel.

The cowtel staff is made up of a herdsman, two milkers, a relief milker and a cleanup man. Veterinarians are called as needed.

St. Louis Milk Market

All milk produced at Modern Dairy Farms, Inc., is shipped daily to the Sealtest Dairy, St. Louis. "Herd owners make a saving of at least $20 per cow per year in shipping costs due to the cowtel marketing arrangement," Mr. Freel reports.

Mr. Freel keeps a record of each

MILKING PARLOR—Herbert Freel, president of Modern Dairy Farms, Inc., is shown here beside one unit of two four-stall milking parlors at the cow

cow's production and furnishes the owner with a copy each month. Thus the herd owner can see exactly how each of his cows is faring on milk and butterfat. Thus from such reports the farmer can check on how his cows rate individually month to month.

It was in 1951 that Mr. Freel first got the idea for a cowtel. He was a dairyman milking 40 cows and then contracted to care for and milk the cows of two neighbors.

The biggest problem Mr. Freel has is to convince some herd owners to let him cull their cows on a milk production basis so that only high producers be kept in the cowtel program. One owner who brought in 50 cows found he was losing money on the herd. However, through culling and management, he worked it down to a 25-cow herd and now he is making a profit on that number of higher producing cows.

"The DHIA tests all cows once a month," Mr. Freel commented, "and this is a great help to us in establishing accurate records so we can show farmers exactly which of their cows are profit makers."

The cowtel uses Surge equipment. The facility also has a garage for the storage of a 4,000 gallon milk tank trailer. This tank trailer can be filled after milking and then a truck picks it up daily for transport to St. Louis, 210 miles distant.

Water for the milkhouse is supplied through a number of sand points driven into the soil 30 ft. Water is easily obtainable by this method in this section of Iowa, Mr. Freel says.

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New Approach for California Parley

SAN FRANCISCO—A new convention approach, featuring "business first," has been announced by the California Hay, Grain & Feed Dealers Assn., according to the general convention chairman for the 1961 meeting, Winslow W. Hall, Pacific Molasses Co., San Francisco.

Mr. Hall pointed out that the convention, which customarily alternates between San Francisco and Los Angeles, will be held in a different San Francisco location, the new Jack Tar Hotel, April 20-22 next year.

Recognizing widespread demand for a change from the traditional social and recreational nature of the convention, he said an entirely new format has been designed for the 1961 meeting. It will feature nationally-known and local speakers on current subjects of business interest to the Californians.

"We know," explained Mr. Hall, "that today's businessman expects definite business value from a convention and must justify the money and time necessary to travel and attend the meetings. The convention next year is going to have plenty of real meat in it."

"Even though the emphasis is to be changed completely," Mr. Hall said, "plenty of conventioneers appreciate the recreational side, too, and that it will be retained and actually expanded. However, these events will be scheduled so that a man may go to the convention for business only, and then return home, eliminating the lighter side and the time and expense it involves."

Feeder Calf Sale Set

DARDANELLE, ARK.—The fifth annual feeder calf sale will be conducted at the Arkansas Valley Marketing Assn. center two miles northwest of here Sept. 21. This sale will be two weeks later than usual so that all cattlemen will have additional time to get their calves in desirable market condition, W. H. McClure, Jr., president of the association, has announced.

TO HONOR FIRM

JEFFERSON, WIS.— The Albers Milling Co. here is one of seven firms which will be honored for contributions to civic growth at an Industrial Recognition Night dinner Sept. 21.

Here's the professor's advice to the feed manufacturer . . .

. . . "I believe there is little doubt but what Feedstuffs is the business publication which would best serve your needs. This is an outstanding publication without rival within its field. I am sure it will fulfill your interest in 'ingredient market news, services available, technical information, innovations, etc.'"

So wrote a professor of animal science at a large midwestern university in response to a letter from a Jamaican feed manufacturer asking which magazine would be most helpful in his business.

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Development and Use Of a Nurse Cow Replacer Feed

"A nurse cow replacer feed can be credited with alleviating many disadvantages and problems which accompany the use of a nurse cow."

By Dr. A. H. McDaniel
Assistant Director of Research
Albers Research Station, Carnation, Wash.

There was a time not too far in the past when animal nutritionists and beef cattle herdsmen scoffed at the idea of replacing a nurse cow with a palatable dry feed that would properly finish a beef calf for sale or show.

This line of reasoning was plausible when one considered the vast amount of research during the past 60 years that demonstrated the difficulty of entirely replacing fluid milk in the ration for beef calves when bloom and finish are considered.

However, with the advent of time and a more complete knowledge of the proper balance of nutrients, unidentified growth factors, amino acid requirements, mineral nutrition, energy values and new feedstuffs, it is now possible to formulate and produce a feed that will replace the nurse cow.

This article reports on the development and use of a nurse cow replacer feed and related considerations in the development and use of such a feed.

FACTORS CONTROLLING OR AFFECTING MILK PRODUCTION—The three factors usually listed as exerting the greatest effect on milk production are: (1) inheritance, (2) stage of lactation and (3) nutrition. A brief discussion of these factors follows.

1. Inheritance—The effect of the factor on milk production can scarcely be questioned. Milk production is the biggest single factor influencing weaning weight of calves. Selection of replacement stock from good milking cows is a prerequisite to maintain or increase milking ability in the herd. However, too heavy milk production may be undesirable in range herds.

The capacity of the calf for milk consumption during the first month of the dam's lactation has been said to be a limiting factor in milk production in beef cows. Therefore it has been assumed that cows with inherent abilities for high production cannot express such abilities since milk secretion is slowed down, and levels off to the amount of milk that is removed from the udder daily by the calf.

2. Stage of Lactation—It has been said that the beef herds usually give just enough milk to give their calves a start. This statement is too general, but research has shown that milk production does drop off rather sharply after the first month of lactation. One cow that produced 25.9 lb. at the time of test during the first month declined to a 15-lb. level by the second month. Gross correlation between daily milk production of Hereford cows and the daily gain and weight of their calves was found to be .60, .71, .52 and .35 lb. for the first, second, third and fourth months respectively.

However, the correlations between the two variables (milk production and daily gain) were not found to be significant the following four months. University of Georgia workers have also shown that a significant positive correlation exists between daily milk production and daily gains of calves.

3. Nutrition—The importance of adequate nutrition for lactating cows cannot be over-emphasized. The requirement for energy is of utmost importance for lactating cows because of the large amount needed for maintenance and milk production.

Montana workers were able to show that under conditions of drouth or heavy stocking, where energy was the critical limiting nutrient, the daily gains of nursing calves were reduced as much as 1 lb. per day. It has also been shown by using identical twins that extreme underfeeding for about 10 weeks prior to calving caused a sharp reduction in milk production, although the composition of the milk and butterfat was not affected. This underfeeding or limitation of energy did not affect production and lactation in later calvings.

Fortunately, the energy requirement can be secured from a usually cheap source—roughage. Unlike nonruminants, the cow does not need a ration balanced in amino acids. The microbes in the so-called "fermentation vat" can synthesize the essential amino acids from poor quality protein and non-protein nitrogen compounds such as urea. Besides the three major minerals (calcium, phosphorus and salt) for which requirements have been established, there are many minerals that are known to be required in trace amounts for which definite requirements have not yet been established. Deficiencies of certain trace minerals are much more pronounced in certain geographic regions than in others. Many workers now consider it advisable to feed a source of trace minerals. Certain trace minerals are known to aid in the growth and multiplication of the rumen micro-organisms, which are so important in animal nutrition.

Particular attention needs to be paid to the possibility of having a phosphorus deficiency because this mineral is known to be universally deficient in cattle fed throughout the world. The phosphorus content of plants generally decreases markedly with maturity, and phosphorus deficiencies often occur in cattle that were sustained for long periods of time on mature dried forage. The deficiency of this mineral materially reduces milk flow.

Ruminants are apparently able to synthesize the B vitamins in sufficient quantities by rumen bacterial fermentation, thus no dietary B vitamins need be supplied to cattle under usual feeding conditions. Vitamin A, of which carotene is a precursor, may need to be supplemented in case of severe drouth, or where cattle are deprived from its sources for extended periods of time.

FORMULATION OF A NURSE COW REPLACER FEED—In formulating a nurse cow replacer feed, one must consider many factors such as: (1) specific purpose of the feed, (2) nutritive requirements of the animal in question, (3) levels of fortification and use of additives, (4) palatability of the feed, and (5) intended levels

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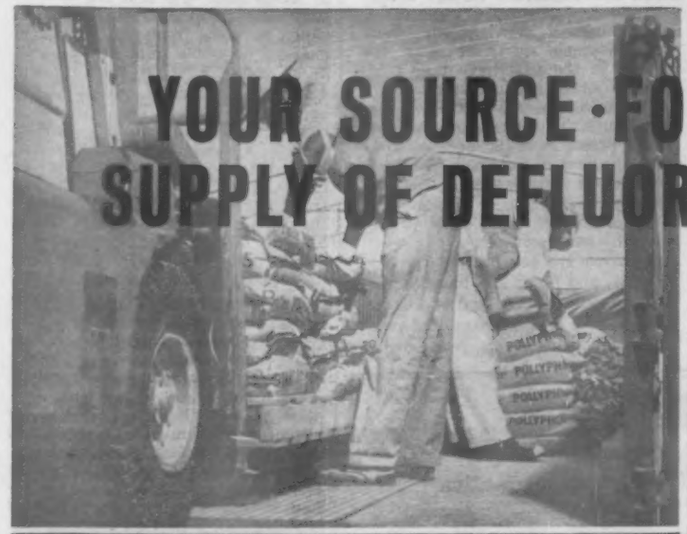

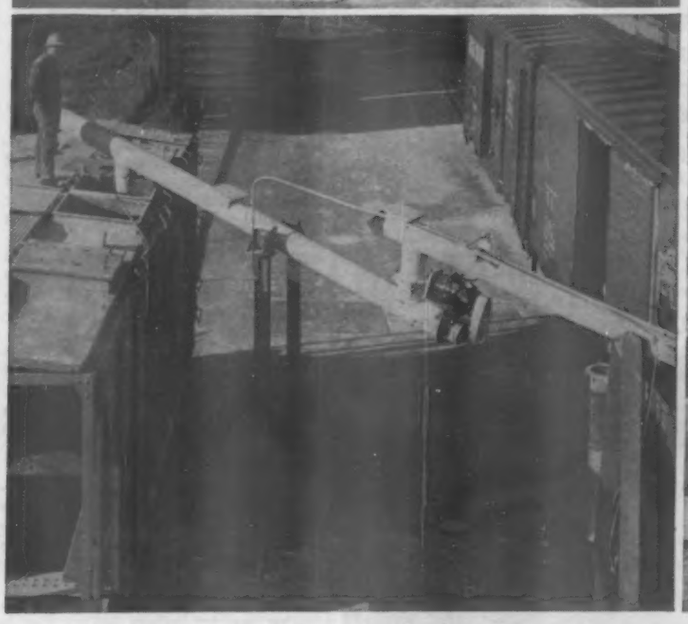

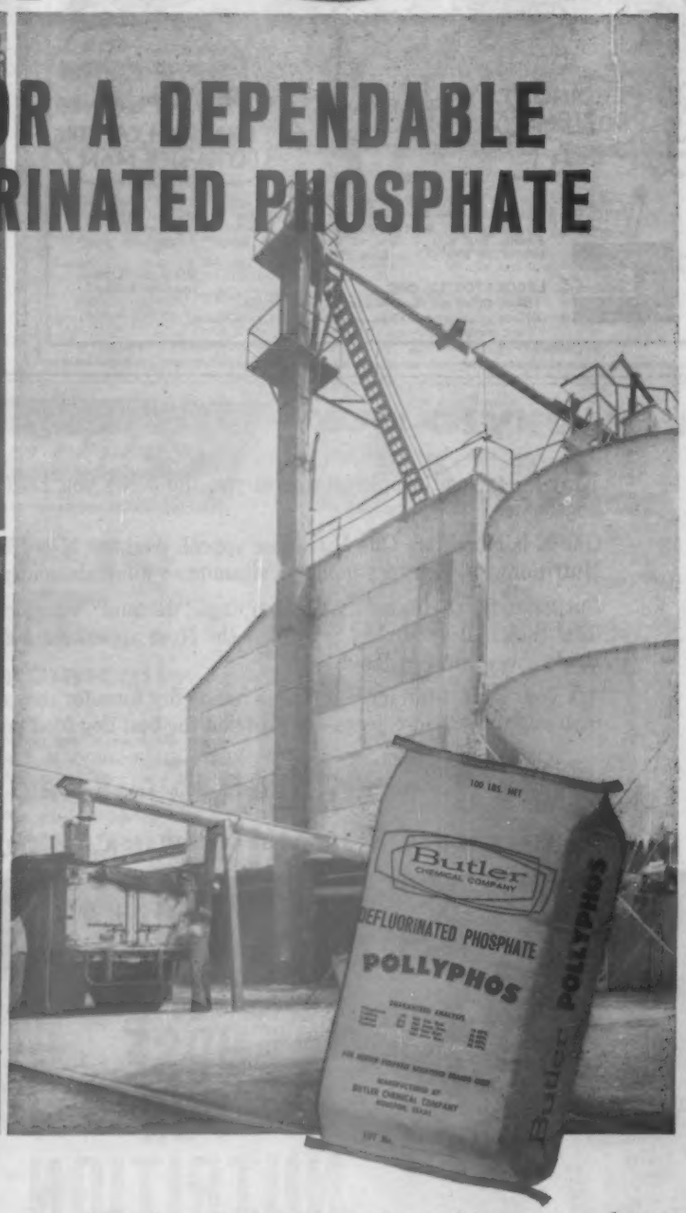

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of use. A brief discussion of each factor follows.

1. Specific purpose of the feed—A calf's capacity for milk consumption increases as milk production of the dam decreases. Larger quantities of milk at this time produce more growth and improve conditioning, which are important factors in developing a "show calf." Therefore, many purebred breeders who show young animals use nurse cows, for no way in the past have they been able to obtain the necessary bloom and finish on animals in the younger age groups. This procedure is costly and time consuming and, with recent advances in nutrition, has been shown to be unnecessary.

Nurse cow replacer feeds have been formulated specifically to replace the nurse cow, especially when beef calves are being fitted for sale or show, and finish and bloom are of prime importance. A feed of this nature should not be confused with "milk substitute" type feeds, which are formulated to be fed in a liquid form during the first few weeks of the calf's life, or calf starter feeds that have been formulated to be fed in conjunction with the "liquid type" milk substitutes.

2. Nutritive Requirements — In formulating a feed to take the place of whole milk, one first has to consider the composition of the milk which is being replaced. A typical analysis of whole milk shows about 87.5% water, 3.5% fat, 3.4% protein, 4.8% sugar or lactose, and 0.68% ash or mineral matter. The total solids content will amount to approximately 13%. Although whole milk is considered to be the natural feed for calves, it will not supply all the nutritional requirements of calves after they are a few weeks of age. Probably the first limiting factors of milk as the calf develops are iron and magnesium as well as energy.

It is therefore evident that a nurse cow replacer feed should be a concentrated product containing an adequate and readily available source of energy and high quality protein, in addition to other nutrients supplied by milk. Required vitamins at adequate levels must be present, and minerals (including trace minerals) are necessary in readily available form, and in a favorable combination. Research at Iowa State University has shown that an intricate balance of trace minerals is required for the most efficient digestion by rumen microorganisms.

3. Feed Fortification—The use of antibiotics (primarily oxytetracycline and chlortetracycline) in a nurse cow replacer feed, in addition to supplemented vitamins, major and trace minerals, and unidentified growth factor sources, should be beneficial. Practically all research conducted on the feeding of Aureomycin and Terramycin to calves has indicated an increased rate of gain and increased feed consumption with reduced scours and other miscellaneous diseases.

The increased rate of gain has been associated with the increased feed consumption and general better health of the calves fed antibiotic. A highly fortified type of feed such as a nurse cow replacer feed should also be stabilized with an antioxidant.

4. Palatability — Nutritional adequacy of a nurse cow replacer feed alone will not insure adequate consumption. The importance of high palatability of a nurse cow replacer feed cannot be over-emphasized.

The palatability problem was a major one for Albers Milling Co. in their development of a nurse cow replacer feed. In feeding trials conducted as early as 1957, it was determined that palatability of a "dry type" nurse cow replacer feed greatly influenced consumption rate, thus affecting rate of gain. Consequently

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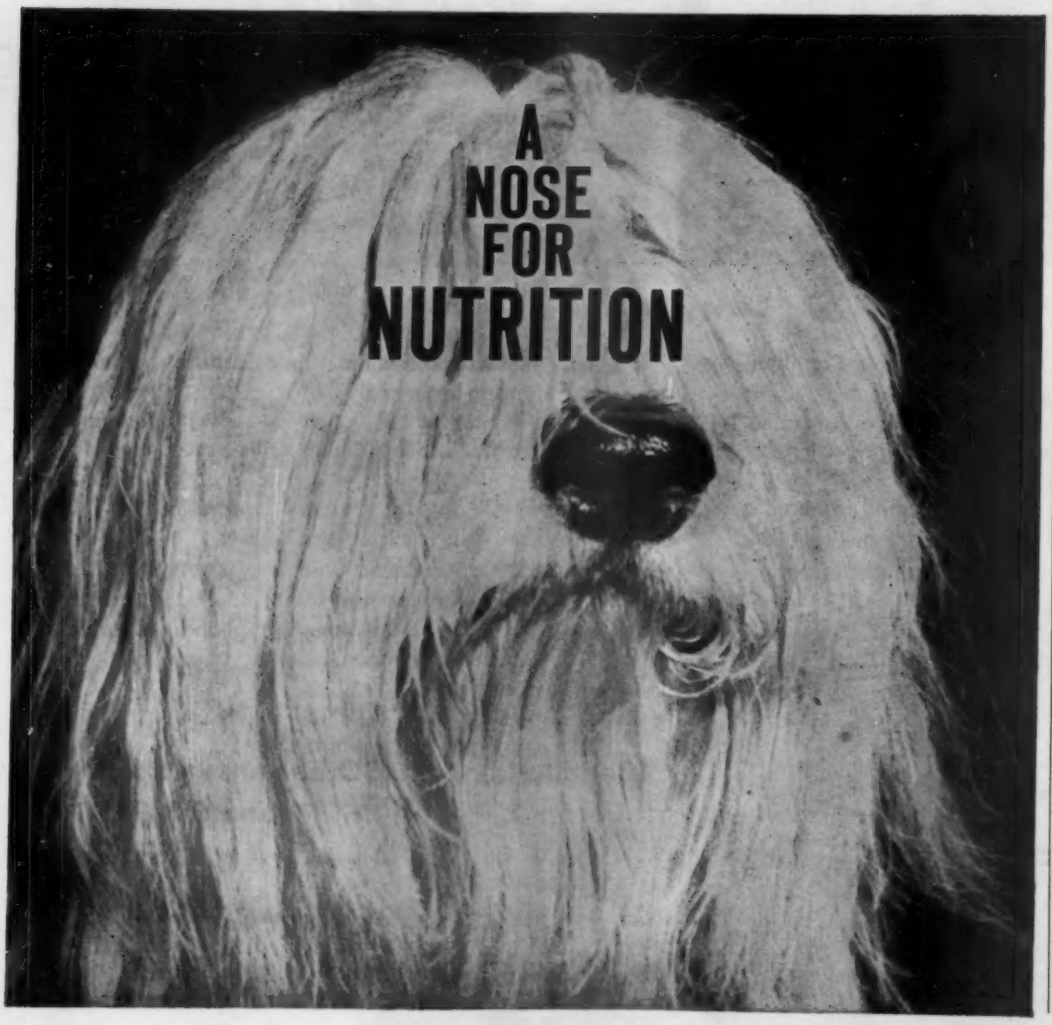

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Levels of Use of Nurse Cow Replacer Feed

Expt. No.	Average Daily Ration, Lbs. Grain	Hay	Milk	N.C.R.F.*	Feed Req./Lb. of Gain, Lbs. Grain	Hay	Milk	N.C.R.F.*	Avg. Daily Gain
1	6.9	7.1	17.0	...	2.6	2.5	5.9	...	2.20
	7.1	8.1	...	2.4	3.3	3.8	...	1.1	2.29
2	7.1	2.9	14.9	...	3.8	1.6	9.9	...	1.88
	8.1	2.5	...	2.7	4.8	1.3	...	1.4	1.93

*Nurse Cow Replacer Feed

many trials were conducted in which rations containing various ingredients and combinations of ingredients were tested for palatability and performance, with reference to finish and bloom of the calves.

It was found that high levels of milk products or high levels of added fats or oils were detrimental to palatability of the feed. However, it was found that fats or oils present in natural feedstuffs such as corn germ meal, feeding oat meal and in the expeller type oil meals were without detrimental effect on palatability.

It was also found that calves on nurse cows had their appetites dulled for the grain portion of their ration to the extent that their energy intake was reduced; this, in turn, decreased their rate of gain below that of calves receiving only the nurse cow replacer feed. This finding was amply demonstrated by using identical twin calves in a reversal type experiment.

5. Levels of Use—The level of use of a nurse cow replacer feed will necessarily vary with the particular brand product used. Individual calf differences will have to be considered also. In feeding trials conducted at the Albers Research Station it was found that show calves in the weight range of 400 to 500 lb. would ordinarily eat from 2.4 to 2.7 lb. of a nurse cow replacer feed daily, in addition to their show ration. This information as well as the feed required per lb. of gain is shown in the accompanying table.

Older, heavier cattle will consume appreciably greater quantities of the feed. Albers Milling Co. recommended that their nurse cow replacer feed (referred to commercially as "Sho-Glo") be fed at a rate of 1.5 lb. per gallon of whole milk replaced. This recommendation is based on the energy levels of whole milk and the nurse cow replacer feed, as well as the performance of the feed in feeding trials.

The following procedure has been recommended for feeding show calves on a nurse cow replacer feed:

1. If practical, let the calf nurse its dam until weaning time at 6-7 months of age.

2. At 3-4 weeks of age, feed the nurse cow replacer feed in a creep. At first mix it with a little oat meal or very palatable feed. Later the feed may be mixed with a calf starter or regular fitting ration.

3. Feed the milk replacer feed on the desired milk replacement basis. The company merchandising the milk replacer feed will state the amount of dry feed necessary to replace 1 gal. of whole milk.

4. At weaning time, or 6-7 months of age, the amount of dry milk replacer can be increased so as to replace the amount of milk the calf was receiving from its dam, thus alleviating any setback or loss of bloom.

DISADVANTAGES OF A NURSE COW: A number of disadvantages accompanying the use of a nurse cow are stated.

1. The high cost of purchasing and maintaining a nurse cow. Record minded cattlemen have found that it costs them between $150 to $250 or more per year to keep a nurse cow. The following factors were considered in arriving at the yearly cost per nurse cow — purchase cost, feed and labor cost, number of calves on nurse cow, years of use, salvage value of nurse cow, and return from her calves.

2. The added space requirements in keeping nurse cows. Experienced beef

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• Herron Almond Hull Meal
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• Tekamine Feed Enzymes
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In this operation ingredients are augered from outside into a vertical auger which fills the four-compartment storage bin.

Ingredients are drawn from the storage bin into weigh buggy and carried to mixer.

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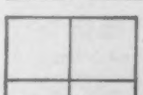

Here are shown some of the many ways hoppers can be joined using common wall construction.

In your inquiry please give ceiling height and space available, capacity desired, number of hoppers required, whether bin is for inside or outside use, auger or gravity discharge, and if air delivery is to be used.

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The 7670-G has acapacity of 5¾ tons and a maximum capacity of 8¾ tons with another tier of sides. It has a minimum slope of 60° with the front practically vertical. The hopper base is 14-gauge steel. Jig punching assures true alignment of holes. Bin can be furnished with weatherproof top for outside installation.

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cattle herdsmen at Carnation Milk Farms state that it is possible to care for two additional show calves for every nurse cow that is eliminated.

3. The possibility of introducing disease when you purchase and bring nurse cows into the herd. It is usually the rule that before nurse cows can be brought onto show premises, they must be accompanied by a certificate of test for Brucellosis and Tuberculosis. Often other health requirements are specified.

4. Nurse cows may not freshen when needed most, and the amount of milk cannot be regulated.

5. Nursing by large calves lowers milk production and the accompanying butting and bruising predisposes mastitis.

6. The cost of transportation and labor in caring for nurse cows when on the show circuit. Nurse cows are often quartered in some inconvenient place at shows, and this space often has to be rented.

7. The embarrassment in keeping a group of nurse cows about the premises.

8. The rules and regulations of some of the major livestock shows now limit or restrict the use of nurse cows. The Pacific International and the Grand National Livestock Expositions are two major shows that have tightened these restrictions.

The cost of a nurse cow replacer feed will be less than the usual total cost of purchasing and keeping a nurse cow. The use of a nurse cow replacer feed can be credited with alleviating many of the disadvantages and problems which accompany the use of a nurse cow. Moreover, it has been found that this method of feeding will outdo a nurse cow if properly used. However, certain basic facts should be understood.

1. Fat show cattle do not, normally, make rapid gains regardless of what is fed.

2. The success of a nurse cow replacer feed is based on the economics and ease afforded by its convenience in decreasing the cost and alleviating the problems associated with the use of a nurse cow, plus the extra "bloom" and resultant winnings thus attained.

3. There is no reliable way in which one can measure "bloom", but this factor can make the difference between a champion or a "spot further down the line."

Farmers Start 'Heifer Pool'

KREIDERSVILLE, PA.—A group of farmers in the Kreidersville vicinity have organized a "heifer pool." The pool is simply a farm where member dairymen send their calves and dry cows. Here, the animals receive excellent care, are put into production sooner, and maintained for a minimum cost.

The idea for the project came from Ike Yates, district salesman for the Ralston Purina Co., according to an article appearing in the July issue of "Grist from the Mill," official publication for the Pennsylvania Millers & Feed Dealers Assn.

Many dairymen believe that the weakest link in most dairy programs is the care and feeding of the dry cow and heifer. According to experts, there is often too much emphasis on the cow while she is in production, and too little while she is not producing.

Calves entered in the pool are accepted at three days of age. The only pampering the calves received was during the first thirty days when they were kept in individual pens and fed twice a day. They were fed a milk replacer from a bucket (no nipple).

Calves were then turned out in loose housing in a herd and segregation ended. They were put on a dry starter until four months of age. After two months, they were given a free choice of alfalfa hay. After four months, they were fed a growing ration of 3 lb. per day per head plus free choice top quality hay.

Between five and seven months they were vaccinated and dehorned on a group basis, thus keeping veterinary fees to a minimum.

Average weight of the calves at four months was 318.5 lb. as against an average nationwide of 235 lb.

The calves are bred, not by age, but by weight—750 lb. for Holsteins and Brown Swiss, 650 lb. for Ayrshires and 550 lb. for Guernseys. It is anticipated that breeding will start when the heifers are 12 months of age. An attempt is being made to have all heifers back on farms within two years.

MANAGER RESIGNS

BEAVER DAM, WIS. — Gordon Patrick, office manager for Hartzheim's Fuel and Feed Co. here for the last four years, has left the firm to become a partner in a local hardware store.

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AUREOMYCIN in potentiated feeds can lead to substantial reductions in early mortality, reactions to stress, incidence of CRD, synovitis and blue comb. This can mean more broilers to market with fewer condemnations, more pullets to house with the health and vigor needed for top production.

Here are Cyanamid's recommendations for potentiated feeds — to be provided during the first critical weeks in life, at times of stress, and just before market:

1. *To start birds—both broilers and replacements.* AUREOMYCIN at 200 grams per ton of feed, fed during first three to four weeks. Calcium sulfate to bring the total calcium level up to 0.8%. Monosodium phosphate to bring the total phosphorus level up to 0.6%.

2. *For stress periods, or at the first sign of trouble in both broiler and replacement flocks.* A feed containing 200 grams of AUREOMYCIN per ton and no added calcium, fed for 5 days. Other ingredients in the ration will usually give 0.4% to 0.55% total calcium. For longer treatment periods, same level of calcium and phosphorus as (1).

3. *Premarket protection for broilers.* After withdrawal of other medicated feeds, and until birds go to market, a feed containing 200 grams of AUREOMYCIN per ton and 0.8% calcium.

How potentiated Aureomycin cuts losses from CRD and synovitis

Dramatic results have been obtained in laboratory and field trials with potentiated AUREOMYCIN to combat these two costly poultry diseases: CRD and synovitis.

In field trials on flocks with CRD, these results were obtained: mortality in the flocks fed potentiated AUREOMYCIN was cut in half over control flocks; production cost per pound was reduced by a cent-and-a-half; condemnations dropped from 4.6% to 0.6%.

In a laboratory experiment, in which all birds were inoculated with a synovitis-causing agent and treatment started after signs of synovitis appeared, potentiated AUREOMYCIN reduced mortality and increased the number of salable birds:

TREATMENT	SALABLE BIRDS
NO AUREOMYCIN	14%
AUREOMYCIN	43%
AUREOMYCIN POTENTIATED	79%

Reduces market condemnations

Poultry scientists say at least 75% of all condemnations are caused by CRD and synovitis . . . the very diseases controlled so successfully with potentiated AUREOMYCIN in formula feeds.

Responsible for most market condemnations are lesions in the air sacs, joints and breasts caused by chronic respiratory disease and synovitis. Estimates of rejections from these two diseases actually range up to 90% of all condemnations. Today, your customers can *farm-control these two diseases* with the use of potentiated AUREOMYCIN fed during the first three weeks and at times when specific disease or stress conditions show up.

Saves more pullets for top production

Good production in the laying house *starts* with replacement chicks. Potentiated AUREOMYCIN feeds cut early chick mortality, reduce the incidence of infections such as PPLO present at the time of hatching. These feeds also reduce the stress from vaccination, moving, handling, variations in temperature, and protect chicks from CRD, blue comb and synovitis. Your customers can figure on having all, or nearly all, of the flock they started, enter the laying house with the health and stamina needed for top egg production.

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Feed manufacturers are invited to write for a special copyprint of the PF symbol for use on bags containing potentiated feeds and in company advertising and literature. Posters, decals and other materials are available. If you wish promotional material or additional information about potentiating AUREOMYCIN, get in touch with your Cyanamid representative. American Cyanamid Company, Agricultural Division, N. Y. 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

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Effect of Feeder and Floor Space Upon Growing Turkeys in Confinement

The amount of feeder and floor space allowed per bird has a direct relationship with the profitable operation of a turkey enterprise; the volume of the operation will be in proportion to the rated capacity of the house and equipment.

Under these conditions it is desirable to know the minimum amounts of feeder and floor space consistent with economical growth. These studies have concentrated more on feeder space than on floor space due to an interaction experienced between these variables in the one trial between feeder and floor space.

Research Review

Roberts (1956), Siegel and Coles (1958), Clark et al. (1953) and Heishman et al. (1952) found that with broiler chickens, 0.5 sq. ft. of floor space per bird was consistently more profitable than larger amounts as long as the selling price was above the cost of production. Average body weight was in general slightly less, but returns were greater because of the larger volume.

Another experiment shows that a progressive improvement in average body weight, feed conversion and dressed market quality of chicken broilers is made as the amount of floor space increases from 0.5 to 1.25 sq. ft. per bird.

Roberts (1956) found practically no difference in rate of growth when broiler chickens were provided with 0.5 up to a maximum of 2.3 linear inches of feeder space per bird. Lanson et al. (1956) compared trough and tube-type feeders with broiler chicks; but allowed slightly less than one half as much feeder space with the tube-type feeders and found no differences in rate of growth. The trough feeder space tested was 2.85 and 3.45 linear inches per chick.

Kreuger et al. (1957) reported that broiler chicks provided with three linear inches of feeder space were heavier than chicks receiving smaller amounts of feeder space. However, McCluskey and Johnson (1958) reported that with feeder space allowances of from ⅓ to 3 linear inches per chick there were no consistent significant differences in growth.

(EDITOR'S NOTE — *The accompanying article on feeder and floor space requirements for turkeys was published by the Ohio Agricultural Experiment Station at Wooster, Ohio, as Research Circular 87. Four men compiling the research and preparing this article include J. W. Wyne, Spruceleigh Farms, Brantford, Ontario; Dr. M. G. McCartney, professor of poultry science at the Ohio station; Prof. R. D. Carter, poultry husbandry department, Iowa State University, and Prof. V. D. Chamberlin, Ohio professor of poultry science.*)

The experimental data of the effect of feeder and floor space upon the growth of turkeys is limited. Wilson and Woodard (1954) concluded that with turkeys, 2 linear inches of trough feeder space was required to eight weeks of age. Some common recommendations vary from 2 to 6 linear inches per turkey.

Experimental Procedure

The first groups of turkeys in this study were started Sept. 26, 1955. Succeeding groups were started June 14, 1956, Nov. 6, 1956, May 27, 1957, Nov. 1, 1957, April 14, 1958, Nov. 25, 1958, Dec. 23, 1958 and Sept. 10, 1959.

The first groups of turkeys were provided with trough feeders to eight weeks of age. Thereafter, in starting the poults, trough feeders were used for the first three weeks and tube-type hanging feeders were used to the particular age that the experiment was terminated. The circumstance of the pan over which the birds had to feed was used in calculating the amount of feeder space available with the tube-type feeders.

In every instance the poults were sexed and wing banded at day-old. Equal numbers of both sexes were randomly distributed into each pen. A spare pen of each sex was maintained and any losses were replaced as they occurred from the spare pens. In the floor space studies, water space was adjusted to compensate for the difference in the number of poults.

The Ohio Turkey Starter containing 26% protein and 800 Calories per pound was fed from day-old to eight weeks. From 8 to 16 weeks the ration fed contained 20% protein and approximately 850 Calories per pound. A finishing ration of 16% protein with approximately 900 Calories per pound was fed from 16 to 24 weeks (Yacowitz and Marsh, 1954). All rations were in the form of all-mash.

All turkeys were weighed at four-week intervals with feed conversion data calculated at intervals of eight weeks. Mortality was recorded in every trial.

It should be pointed out that all data were analyzed by means of the analysis of variance, using the group-to-group method.

The average weights, feed conversion and total mortality for the first group of small-type White turkeys to eight weeks are presented in Table 1. The only significant difference was obtained with the lesser amount of trough feeder space. This may be partially explained by the fact that for a five-day period, the groups with 1 linear inch of feeder space were fed more often in order to keep feed available to the turkeys at all times.

After this five-day period, all pens were fed the same number of times daily. The weights of both sexes were combined in this particular phase. The turkeys were a Beltsville X Wahkeen cross. There was no significant effect due to floor space, but the litter re-

TABLE 1—Average Body Weights, Feed Conversion and Mortality of Small-Type White Turkeys as Affected by Floor and Feeder Space

Floor space per poult (sq. ft.)	Feeder space† per poult (linear inches)	0 TO 8 WEEKS Av. wt.* (grams)	Feed conv. (lbs.)	Mortality (total No. died)
1	1‡	1260	2.3	7
	3‡	1134	2.7	18
2	1§	1310	2.2	7
	3§	1182	2.3	7

L.S.D. $P < .01 = 132$ gram.
*Average of males and females combined.
†Trough feeders were used throughout this period.
‡Average of duplicate groups of 120 poults each.
§Average of duplicate groups of 60 poults each.

TABLE 2—Average Gain, Feed Conversion and Mortality of Small-Type White Turkeys as Affected by Floor and Feeder Space

Floor space per poult (sq. ft.)	Feeder space per poult† (linear inches)	16 TO 24 WEEKS Av. gain (lbs.) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
3.2	1.6‡	5.7	2.4	8.4	3
	3.2‡	5.8	2.4	8.2	3
5.5	1.6§	5.7	2.8*	8.6	3
	3.2§	6.0	2.8*	8.4	1

*Significant $P < .05$.
†Tube-type hanging feeders were used in this test.
‡Average of duplicate groups of 170 poults each.
§Average of duplicate groups of 100 poults each.

TABLE 3—Effect of Feeder Space on Growth, Feed Conversion and Mortality of Small-Type White Turkeys*

Feeder space per poult‡ (linear inches)	0 TO 8 WEEKS† Av. wt. (grams) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
0.83	1295	1056	2.0	28
1.06	1295	1073	2.2	22
1.59	1333	1075	2.0	8
	NS	NS	NS	

*Floor space was two square feet per poult.
†Average of triplicate groups of 100 poults each.
‡Trough feeders were used to three-weeks and tube-type hanging feeders thereafter.
NS—Non-significant differences among treatments.

TABLE 4—Effect of Feeder Space on Growth, Feed Conversion and Mortality of Small-Type White Turkeys*

Feeder space per poult‡ (linear inches)	8 TO 16 WEEKS† Av. wt. (lbs.) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
0.66	9.2	6.3	3.7	2
1.32	9.1	6.5	3.7	4
1.98	9.4	6.6	3.6	4
	NS	NS	NS	

*Floor space was two and one-half square feet per poult.
†Average of triplicate groups of 80 poults each.
‡Tube-type hanging feeders used throughout.

TABLE 5—Effect of Feeder Space on Growth, Feed Conversion and Mortality of Small-Type White Turkeys*

Feeder space per poult‡ (linear inches)	16 TO 24 WEEKS† Av. wt. (lbs.) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
1	14.7	8.6	7.0	0
2	14.4	8.7	7.3	0
3	14.7	8.8	7.3	1
	NS	NS	NS	

*Floor space was four square feet per poult.
†Average of triplicate groups of 50 poults each.
‡Tube type hanging feeders used throughout.

TABLE 6—Effect of Floor and Feeder Space Upon Growth, Feed Conversion and Mortality of Small-Type White Turkeys

Floor space per poult (sq. ft.)	Feeder space* per poult (linear inches)	0 TO 8 WEEKS Av. wt.† (grams)	Feed conv. (lbs.)	Mortality (total No. died)
1.2	0.53‡	1084	2.6	16
	1.06‡	1187	2.6	11
2.4	0.53§	1199	2.5	5
	1.06§	1180	2.6	5

Interaction between feeder and floor space was significant ($P < .05$).
*Trough feeders to three weeks and tube-type hanging feeders thereafter.
†Males and females combined.
‡Average of duplicate groups of 100 poults each.
§Average of duplicate groups of 50 poults each.

TABLE 7—Effect of Floor and Feeder Space Upon Growth, Feed Conversion and Mortality of Small-Type White Turkeys

Floor space per poult (sq. ft.)	Feeder space per poult† (linear inches)	8 TO 16 WEEKS Av. wt. (lbs.) Males	Females*	Feed conv. (lbs.)	Mortality (total No. died)
2	0.88‡	9.0	6.3	4.2	4
	1.77‡	9.0	6.5	4.0	5
	2.65‡	9.2	6.6	4.0	8
3	0.88§	8.8	6.1	4.4	1
	1.77§	8.7	6.2	4.3	5
	2.65§	8.5	6.1	4.2	5
		NS		NS	

*L.S.D. $P < .05 = 0.2$ due to floor space with females.
†Tube-type hanging feeders used throughout.
‡Average of duplicate groups of 60 poults each.
§Average of duplicate groups of 40 poults each.

TABLE 8—Effect of Feeder Space Upon Growth, Variation, Feed Conversion and Mortality of Small-Type White Turkeys*

Feeder space per poult‡ (linear inches)	0 TO 8 WEEKS† Av. wt. (grams) Males	c.v.	Females	c.v.	Feed conv. (lbs.)	Mortality (total No. died)
0.5	1327	13.1	1064	10.4	2.5	16
1.0	1348	10.5	1079	13.5	2.5	15
1.5	1367	12.7	1095	12.6	2.5	19
	NS		NS		NS	

*Floor space was constant at two square feet per poult.
†Average of five replicate groups of 60 poults each.
‡Trough feeders were used to three-weeks and tube-type hanging feeders thereafter.
c.v.—coefficient of variation.

TABLE 9—Effect of Feeder Space Upon Growth, Feed Conversion and Mortality of Large-Type White Turkeys*

Feeder space per poult‡ (linear inches)	0 TO 8 WEEKS† Av. wt. (grams) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
1.0	1532	1262	2.2	9
1.5	1522	1260	2.5	9
2.0	1525	1361	2.4	12
	NS	NS	NS	

*Floor space was constant with two square feet per poult.
†Average of duplicate groups of 80 poults each.
‡Trough feeders were used to three-weeks and tube-type hanging feeders thereafter.

quired more frequent stirring with the one square foot of floor space to keep it in a satisfactory condition.

These same poults were transferred to a pole shelter shortly after they were eight weeks of age; but data were only collected for the 16 to 24-week period. The results of this phase are presented in Table 2. The only significant difference observed was a depression in average gain of the females with 3.2 as compared to 5.5 sq. ft. of floor space per bird.

Feeder Space Effects

Table 3 presents the effects on growth, feed conversion and mortality of feeder space with small-type White turkeys to eight weeks of age. Floor space was kept constant and feeder space was the only variable. There were no significant differences due to the different amounts of feeder space.

The poults used for the data obtained in Table 3 were continued to 16-weeks and 24-weeks and the data are presented in Tables 4 and 5, respectively. In each instance, the groups provided with the least amount of feeder space were the same during each phase of the experiment. There were no significant differences in either phase due to feeder space.

Floor and feeder space allowances based on previous experiments were altered and the data are presented in Table 6 for small-type White turkeys. In this instance, the interaction between floor and feeder space was significant and indicated that both floor and feeder space should not be reduced for best results. The 8 to 16-week data with modification based on previous results with this same group of turkeys are presented in Table 7.

In this period there was no significant difference due to feeder space; but there was a significant difference in favor of the females on the two square feet of floor space. This is difficult to explain and may be a chance occurrence.

The data for the last trial in this series with small-type White turkeys is presented in Table 8. There were five replications and no significant differences were noted with the different amounts of feeder space. The coefficient of variation was not different due to feeder space, indicating that the different feeder space allowances provided in these trials did not affect the variability in growth at eight weeks of age in turkey poults.

Tables 9, 10 and 11 concern large-type White turkeys during the periods 0 to 8, 8 to 16 and 16 to 24-weeks respectively. There were no significant differences in the average weights of males or females during any phase of this experiment.

When feeder space was reduced to 0.5 in. per poult, there was still no

TABLE 10—Effect of Feeder Space Upon Growth, Feed Conversion and Mortality of Large-Type White Turkeys*

Feeder space per poult‡ (linear inches)	8 TO 16 WEEKS† Av. wt. (lbs.) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
1.5	11.4	8.6	3.2	1
2.0	11.4	8.6	3.1	0
2.5	11.3	8.7	3.3	1
	NS	NS	NS	

*Floor space was constant with four square feet per poult.
†Average of four replicate groups of 45 poults each.
‡Tube-type hanging feeders used throughout.

TABLE 11—Effect of Feeder Space Upon Growth, Feed Conversion and Mortality of Large-Type White Turkeys*

Feeder space per poult‡ (linear inches)	16 TO 24 WEEKS† Av. wt. (lbs.) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
1.0	19.3	12.6	6.7	0
2.0	19.4	12.8	6.8	0
3.0	19.2	12.6	6.7	0
	NS	NS	NS	

*Floor space was constant at five square feet per poult.
†Average of four replicate groups of 36 poults each.
‡Tube-type hanging feeders used throughout.

TABLE 12—Effect of Feeder Space Upon Growth, Feed Conversion and Mortality of Large-Type White Turkeys*

Feeder space per poult‡ (linear inches)	0 TO 8 WEEKS† Av. wt. (grams) Males	Females	Feed conv. (lbs.)	Mortality (total No. died)
0.5	1449	1194	2.2	12
1.0	1525	1247	2.2	19
1.5	1509	1279	2.2	13
	NS	NS	NS	

*Floor space was constant at two square feet per poult.
†Average of triplicate groups of 100 poults each.
‡Trough feeders were used to three weeks and tube-type hanging feeders thereafter.

TABLE 13—Effect of Floor Space on Growth, Feed Conversion and Mortality*

Trial 1—Large-Type White, 0-8 Weeks

Floor Space (Sq. Ft.)	Av. No. Poults per group	Av. Gains (Grams) Males	Females	Feed Conv. (Lbs.) Males	Females	Mortality (Total No. Died) Males	Females
1.5	80	1440	1380	2.2	2.2	4	3
2.0	40	1449	1385	2.2	2.3	3	4
3.0	40	1492	1377	2.2	2.3	5	0
		NS	NS	NS	NS		

Trial 2—Small-Type White Females, 0-8 Weeks

Floor Space (Sq. Ft.)	Av. No. Poults per group	Av. Gains (Grams)	Feed Conv. (Lbs.)	Mortality (Total No. Died)
1.5	120	1484	2.3	8
2.0	90	1554	2.4	4
2.5	72	1429	2.3	3
3.0	60	1544	2.3	2
		NS	NS	

Trial 3—Large-Type White, 0-8 Weeks

Floor Space (Sq. Ft.)	Av. No. Poults per group	Av. Gains (Grams) Males†	Females	Feed Conv. (Lbs.) Males	Females	Mortality (Total No. Died) Males	Females
1.0	120	1423	1362	2.2	2.1	4	11
1.5	80	1644	1356	2.1	2.3	5	3
2.0	60	1796	1381	2.1	2.3	6	1
			NS	NS	NS		

†Significant—P .05.
*Feeder space was constant at 0.5 inch per poult. Trough feeders used to 3 weeks and hanging feeders (tube-type) thereafter. Average of duplicate groups.

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significant difference in growth of large-type White turkeys. These data are presented in Table 12.

Floor Space Trials

The data presented in Table 13 concerns two floor space trials with large-type White turkeys and one with small-type White turkeys. In Trial 1, large-type White poults were confined to 1.5, 2 and 3 sq. ft. of floor space to eight weeks of age. The males showed a trend of increased gain as the floor space increased, while the females did not show the same trend in growth. In Trial 2, small-type White poults were provided 1.5, 2, 2.5 and 3 sq. ft. of floor space.

The greatest gains were obtained when 2 sq. ft. of floor space were allowed to eight weeks of age. There was a tendency for increased mortality as the floor space was reduced from 3 to 1.5 sq. ft. per poult. In Trial 3, using large-type White poults, the floor space allowance was reduced further, comparing 1, 1.5 and 2 sq. ft. Again the males showed a trend of increased gain as floor space per poult was increased. A similar trend was obtained for the females, but the difference was not as great as for the males. In this trial the difference in average gains was significant for the males.

Conclusions

Small-type White turkeys. Under the conditions of these experiments as little as 0.5 in. of feeder space per poult with tube-type hanging feeders was adequate from the standpoint of growth to eight weeks of age. There were no consistent differences in feed conversion or mortality during this period. One square foot of floor space per poult appeared adequate; but in one trial an interaction between feeder and floor space was observed.

Less than 1 inch of feeder space was sufficient with this type of turkey from 8 to 16-weeks and one inch gave equal results with larger amounts of feeder space during the 16 to 24- week period. The floor space requirements of turkeys require more investigation before definite recommendations can be made for the periods after eight weeks of age.

Large-type White turkeys. Growth was adequately supported with as little as 0.5 in. of feeder space per poult with tube-type feeders during the first eight weeks. Based on only one trial, 1.5 in. of feeder space was adequate for growth from 8 to 16-weeks with this type of turkey and feeder, while 1 inch was adequate after 16 weeks. Maximum poult gains were obtained when 1.5 to 2 sq. ft. of floor space were provided to eight weeks of age. However, 1 to 1.5 sq. ft. of floor space produced a greater total weight gain, resulting in more economical use of brooder house space. Ventilation and wet litter problems may arise at certain seasons of the year when the floor space allowance is less than 2 sq. ft. per poult.

REFERENCES

Clark, T. B., J. O. Heishman and C. J. Cunningham, 1953. How much floor space for broilers? Science Serves Your Farm, West Va. Univ. Agric. Expt. Sta. Bull. 357, p. 7.

Hartung, R. E., 1955. Floor space for broilers. Poultry Sci. 34:1200.

Heishman, J. O., C. J. Cunningham and T. B. Clark, 1952. Floor space requirements of broilers. Poultry Sci. 31:290.

Kreuger, W. F., J. L. Skinner and J. L. Quisenberry, 1957. Response of broilers to varying amounts of feeder space. Progress Report 1947, Texas Agric. Expt. Sta.

Lamson, H. K., J. R. Smyth and C. E. Horvee, 1956. A comparison of tube and trough feeders for broiler production. Poultry Sci. 35:1154.

McCluskey, W. H., and L. E. Johnson, 1958. The influence of feeder space upon chick growth. Poultry Sci. 37:889.

Roberts, R. E., 1956. Study considers management nutrition. Agricultural Res. in Indiana. 68th Annual Report. Purdue Univ. Agric. Expt. Sta., p. 38.

Siegel, P. B., and R. H. Cotes, 1955. Effects of floor space on broiler performance. Poultry Sci. 37: (abstract).

Wilson, W. O., and A. Woodard, 1954. Feeding space requirements for young turkey poults. Poultry Sci. 33:1278.

Yacowitz, H., and G. A. Marsh, 1954. Ohio Poultry Rations. Ohio Agric. Ext. Buil. 343.

Seeking to Produce Deep Yellow Broiler

STATE COLLEGE, MISS. — Because American housewives prefer chickens wth a deep yellow color when they shop, Robert G. Ratliff, a graduate student in poultry at Mississippi State University, is seeking a way to add pigmentation to broilers during their growth period.

Mr. Ratliff, who is specializing in nutrition, is presently experimenting with 400 chickens, feeding them first a pigment-free diet to make them as pure white as possible. Following that, he will then feed them on yellow corn, alfalfa and other foods in an effort to make their flesh turn a yellow color.

Working toward a doctorate in poultry, Mr. Ratliff is seeking enough data through his experiments to determine the effect of different major and minor minerals and sources of protein of pigmentation. The chemical name of yellow pigment is "xanthophyll."

Mr. Ratliff pointed out that how yellow a bird is has nothing to do with its quality. "Xanthophyll has no nutritional value. It's only a color. But housewives want a yellow bird, and so does the producer. So it will be beneficial to the raiser to find a diet that will make the chickens more yellow."

The yellow coloring does aid in hiding unsightly pin feather bruises and blemishes that might occur during processing, he noted. But added "bleached birds will show minor defects that in no way affect their quality but can make them unsightly and difficult to sell."

In addition to seeking a poultry diet that will produce xanthophyll, Mr. Ratliff is also trying to isolate the factors that tend to bleach a bird.

He noted that some producers in western areas of the U.S. grow a pigment-free bird, but for economic reasons, as they have only white corn and other such foods available, and it would cost them too much to import xanthophyll-producing grains.

"It's a strange world," Mr. Ratliff said. "Ironically, we are seeking a way to add pigmentation to our birds while just the other day I received a letter from a producer in Spain wanting to know how he could grow bleached birds. The demand in Spain is for white-fleshed chickens."

No Action Taken on Complaint Over Mill

STOUGHTON, WIS.—The city council here has taken no action on a complaint from 13 residents who live across from the City Feed Mill that the mill was a public nuisance and a health hazard.

The mayor and city health officer were to appeal to the mill management to reduce dust in the area, which is an industrial zone but contains some homes. W. E. Chritton, city attorney, said the mill could not be termed a public nuisance because it did not affect a large part of the city.

PRODUCTION STARTS

CLINTON, IOWA—The Iowa Nutrition Corp. has begun the production of feed supplements in the former Pillsbury country elevator here. James Halbach is manager. The business is a subsidiary of Stabilized Vitamins, Inc., of Garfield, N.J.

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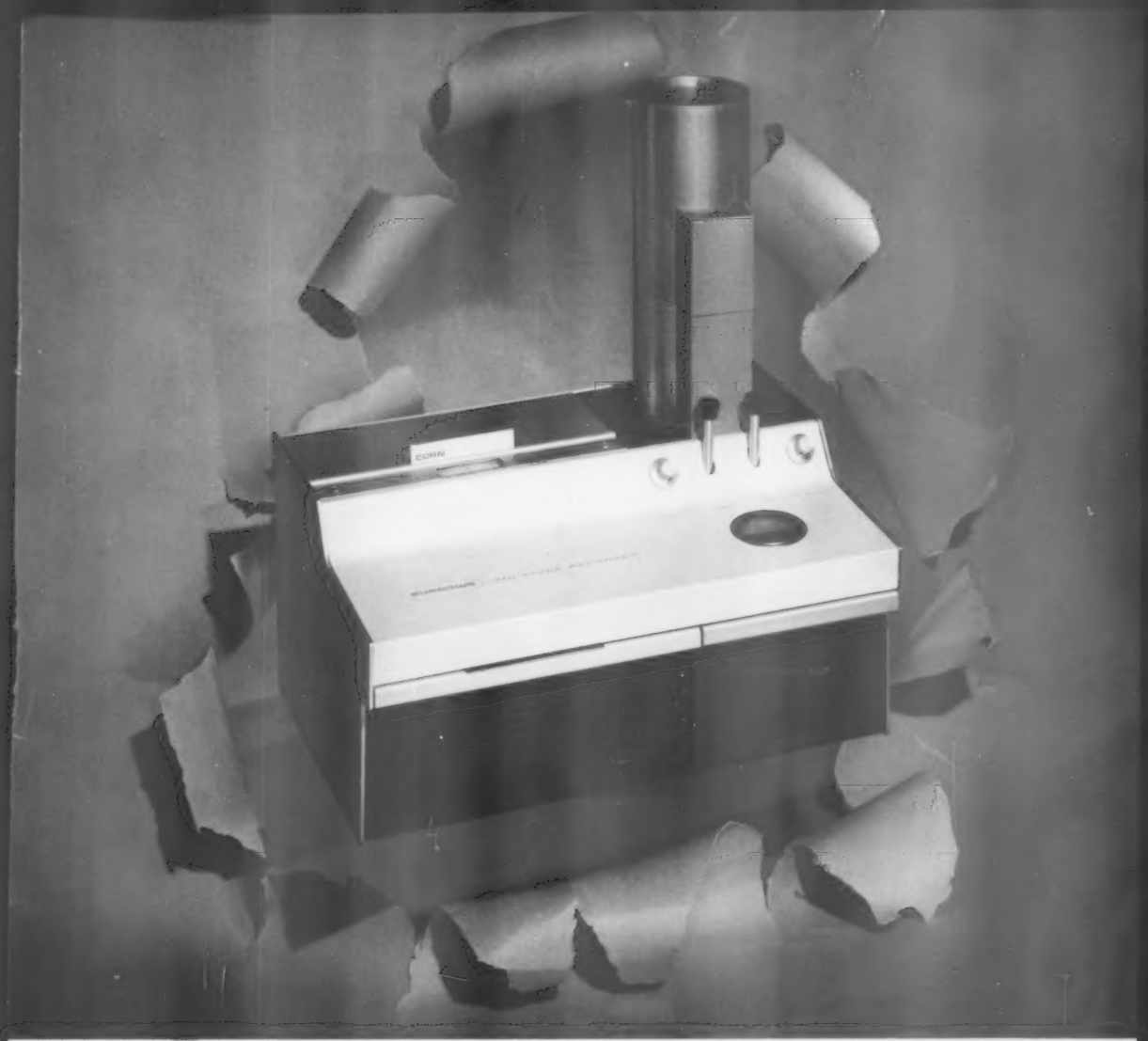

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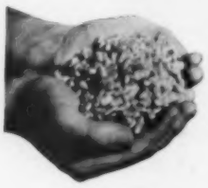
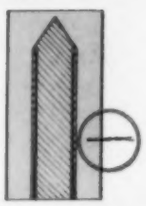
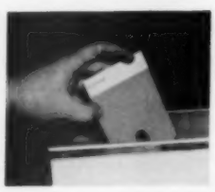


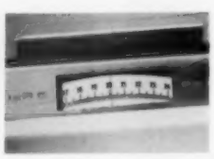
Large 250 Gram Sample— *is used on all grains. This, plus new round test cell with special center core construction assures greater accuracy and eliminates weight per bushel adjustments.*



Automatic Temperature Correction—*Built into the test cell is an electronic sensing device (a thermistor) which automatically computes the temperature of the sample as it is being tested. No separate temperature reading is required.*



Special Printed Circuit Cards Program Each Computation *— A printed circuit on a card is inserted in the Recorder — a separate card being furnished for each type of grain being tested. No charts are required.*



Direct Moisture Percentage Reading *— A motorized drum revolves automatically and comes to a stop giving a direct visual reading on a lighted dial. All readings are to .1 of one percent.*

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AUTOMATIC TEMPERATURE CORRECTION

No longer is it necessary to make a separate temperature test and add or subtract to the reading — this is done instantly and automatically by the instrument.

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The Moisture Recorder operates on the proven principle of dielectric measurement using new high frequency radio waves to penetrate the grain sample. A new balanced electronic circuit operating like a mechanical scale assures absolute accuracy. Power supply voltages can vary, tubes can change due to aging and environment, yet the complete accuracy of the moisture tester is maintained at all times. Actual laboratory tests of the Burrows Moisture Recorder after continuous use have shown no detectable error in calibration over that originally set at the factory. An electronically controlled servo motor automatically balances the circuit at all times providing an automatic reading of moisture content and an automatic self-checking each time the test cell is emptied. All calibrations have been determined in accordance with official U.S.D.A. oven standards. Range: 4 to 35 percent.

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Environment Effect On Poultry Studied In Mississippi

VERONA, MISS.—Among tests being conducted at the Verona Experiment Station under the direction of Robert Albritton, manager, is a poultry project in which thousands of White Leghorn pullets and hens are being raised under different environments.

In the laying houses some of the hens are kept in individual pens with running water and feed before them at all times. In another section, other layers are allowed the run of the houses.

Feed for the birds is weighed and a record of production is kept.

Pullets which are being raised to replace the laying hens are given feed in varying amounts in order to check the effect of feed on the growth of the chickens. Within a short time the old layers will be sold and the new ones will come into production.

A storage room for eggs is located near the laying houses. This room is kept cool at all times, insuring freshness of the eggs on hand.

Khapra Beetle Still Stored Grain Threat

MOSCOW, IDAHO—So far inspectors of the U.S. Department of Agriculture plant quarantine service have headed the khapra beetle off, but it's still the number one threat to stored grain in this country, according to Roland Portman, extension entomologist for the University of Idaho.

The beetle was first discovered in California in 1953 and in New Mexico, Mexico, Texas and Arizona shortly after that date. It is still coming over in shipments of foodstuffs to this country from Europe and Asia.

Inspectors report they have found the beetle on 27 ships entering U.S. harbors since May 1 of this year. It has been discovered and destroyed a total of 113 times since July 1, 1959. Total for the previous year was 44 times.

"The beetle is stepping up its efforts to become widespread in American stored grain as it spreads throughout other countries from its original home in India, Ceylon and Malaya," Mr. Portman says. "Now it arrives in shipments to us from Africa, several European countries and other Asiatic areas. If it were only in shipments of grain, we would have little trouble. But plant quarantine inspectors are finding the khapra beetle on dried food products, hides, glue and other animal products.

"They find the insects and their larvae on cardboard cartons, under labels on canned foods, automobiles, steel wire, bags and wrappings of various kinds of general cargo and in crevices and cracks in store rooms and holds of ships. The larvae can live for a long time without food, another characteristic that makes their spread easily possible if they get past quarantine."

Mr. Portman points out that this nation is doing all it can to prevent infestation of American-bound goods at their port of origin. Officials of shipping companies become more and more wary of carrying infested goods to this country as the companies discover that they must stand expense of cargo fumigation when the beetles are discovered in their ships in American ports. Ships are detained until thorough fumigation has been completed. Canadian officials are cooperating with USDA inspectors to keep the stored-grain pest from becoming widespread in both countries, Mr. Portman says.

FEED STORE BURNS

DeLAND, FLA. — Fire recently destroyed the Volusia Feed Store in downtown DeLand. The building was owned by L. I. Mills of Chicago. The loss was estimated at $100,000 or more.

ZOO FEEDS TONS OF INGREDIENTS

SALT LAKE CITY—How much feed goes onto the "dinner table" at the municipal zoo in a medium-sized American city?

Jerry deBary, curator at Salt Lake City's Hogle's Zoo, says, "plenty."

The curator reports that his captive gourmets down more than 65 tons of hay and 3 tons of rolled oats. About 9 tons of dog meal is listed on the yearly menu, along with 520 mice and 100 rats.

Zoo animals get their supplements, too. The annual list includes 200 lb. of mineral concentrate, 38 gal. of vitamin concentrate, 2 gal. of B-complex syrup and 24 lb. of simulated dog milk.

In one of the most specialized food products used at Hogle Zoo, 300 lb. of carrot extract is used to keep the pink flamingos "in the pink." The extract actually helps the birds to retain their color, which ordinarily tends to fade into white, Mr. deBary said.

"Preventive treatment is far better than trying to cure sickness," Mr. deBary explains. "It is a basic misconception that an animal can do with almost anything. Even a dog, physiologically, needs as well balanced a diet as his master."

On the subject of animal feeding in general, Mr. deBary listed three essentials for well-cared-for animals: Balanced diet, free running supply of water and clean quarters.

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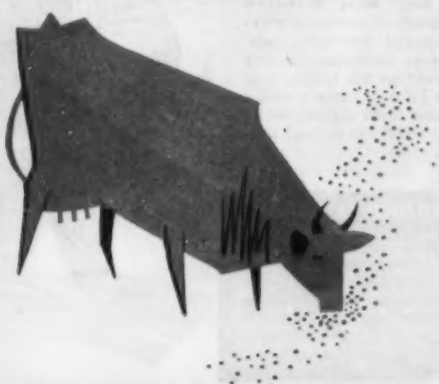

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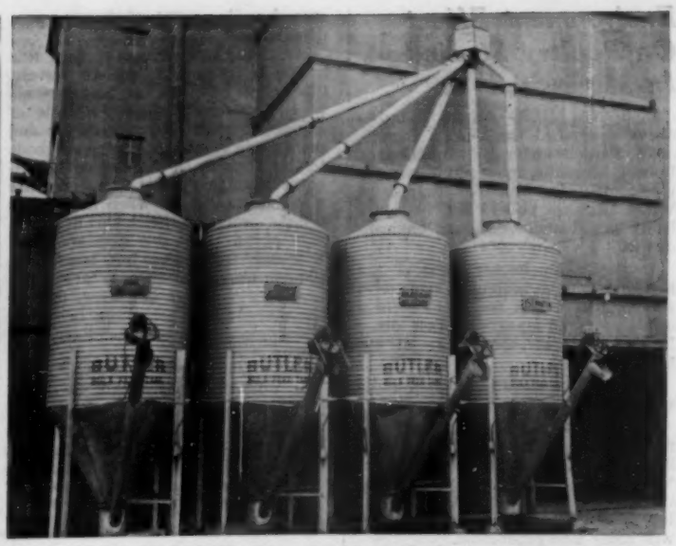

FEED STORAGE TANKS—These four 7-ton Butler feed storage tanks outside the West Point (Neb.) Feed Products Co. mill are for fast moving feeds. Many farmers call for their own feeds and get a $2 ton discount for pickup.

Firm's Pelleted Feeds Important In Merchandising Program

By Al P. Nelson
Feedstuffs Special Writer

Pelleted feeds play an important part in the merchandising program of the West Point (Neb.) Feed Products Co.

This firm, which is a large alfalfa feed producer, pellets all its alfalfa production. It also makes its own line of Elkhorn (brand) formula feeds for poultry and livestock. A large part of the formula production is in pellets, too, reports Fred B. Laux, sales manager.

Founder of the firm and pioneer in the development of the use of alfalfa feeds in this section of Nebraska was the late Charles J. Kaup. His wife, Mrs. Bernice M. Kaup, is now president of the company. George Remm is production manager and Charles Moulton is office manager.

"All of our cattle feed is pelleted," states Mr. Laux. "We use the ¼ in. pellet size. Much of our cattle feed is sold locally in Cuming County. This county has one of the largest livestock populations in the nation. There are over 100,000 head of cattle in this county, according to the records of the local county assessor."

The West Point Feed Products Co. has one outside salesman who visits feeders in this area, consulting with them about their many feed requirements. This personal solicitation works out very well, for the salesman can inspect herds, observe feeding conditions, record keeping, etc., and then suggest improvements.

"A number of cattlemen are using a lot of alfalfa pellets in the beef program," says Mr. Laux. "Some use 2-4 lb. per day per steer and are getting very satisfactory results."

Pelleted feeds are also in favor with many hog raisers. Some use pellets right through from baby pig stage to brooder sow cycle.

"We sell pelleted alfalfa to many feed mills and dealers in the Nebraska-Iowa area," says Mr. Laux. "About 50% of our production goes to feed mills and the balance we sell close to our headquarters."

Two Pellet Mills

The Nebraska firm has two 100 h.p. California pellet mills and two Wenger coolers and crumblizers. One pellet mill is used entirely for pelleting alfalfa and the other is for pelleting the firm's line of Elkhorn brand formula feeds. In the case of alfalfa pelleting, if the alfalfa is later to go into formula feed, the pellets are reground. If the feeder wants alfalfa meal, the pellets are also reground.

"Pelleting is a 'must' for bulk handling alfalfa. Pelleting lends itself to the over-all problems of storage, handling and shipment. Although we continue to have good demand for sacked reground pellets, more and more of our customers are calling for pellets in the bulk," explains Mr. Laux.

Many farmers in the livestock-rich Cuming County area like to call for

LOOK OVER FEED—Looking over some of the firm's pelleted formula feed are (left to right): Fred B. Laux, sales manager; George Remm, production manager, and Charles Moulton, nutritionist.

their alfalfa pellets and formula feeds. To facilitate serving such customers, the West Point Feed Products Co. has four Butler metal bulk tanks alongside the mill. Each holds 7 tons and each is equipped with augers for loading. The kind of feed stored in each tank is lettered on a sign attached to the tank so that farmers can quickly drive up to the tank from which they desire feed. Feed from the tanks is weighed on a 20-ton scale at the nearby office location.

Usually fast moving feeds are delivered through these outside tanks. The tanks hold several loads each and can be refilled quickly. The customer gets a $2 discount per ton if he calls for his own feed.

"We have two small trucks which we converted for bulk use," says Mr. Laux. "Each truck has a 2½-ton capacity, which is just about the amount that most hog feeders can use in their self feeders at one time."

For grinding alfalfa after it is dried in its chopped form, the milling firm has a 150 h.p. Williams mill and a 150 h.p. Gruendler. The company also has a 24-24 Heil 125 h.p. grinder which is used to regrind alfalfa pellets, corn, etc.

Used in the production of Elkhorn formula feeds are a 1-ton capacity Kelly Duplex and a Haynes 1-ton mixer.

Much of the packaged formula feed and alfalfa pellets or meal are bagged in 50-lb. paper bags. The Stoker bagging machine automatically weighs and shuts off the flow into valve type bags.

Buys Alfalfa Locally

The firm purchases its alfalfa from local farmers who grow considerable tonnage each year. The West Point choppers move into the fields at harvest time and chop right on the premises. The alfalfa is then brought to the plant where it is dehydrated, and then it goes into the grinders.

In its complete hog feed, the company uses 100 lb. of dehydrated alfalfa; in poultry feeds, 50-150 lb., and in the 36% hog feed, 350 lb. of dehydrated alfalfa per ton, according to Mr. Laux.

"The manufacture of formula feed enables us to keep our plant operating the year around, instead of just during the alfalfa season," reports Mr. Laux. "We employ 12 men regularly and step up to 32 during alfalfa season."

To advertise its alfalfa pellets and its formula feed, the West Point firm uses weekly direct mail in the form of cards which quote feed prices. Some newspaper advertising is also done regularly. In addition, the company uses spot announcements on the radio stations at Norfolk and Fremont, Neb.

For a number of years, the feed company has cooperated with 4-H groups in their various activities. The management occasionally takes the 4-H winners at the annual Ak Sar Ben livestock show to a steak dinner. The West Point firm also publishes pictures of the 4-H youngsters in a large newspaper advertisement, telling of their accomplishments in agriculture.

This is a good will building idea. Many of these 4-H youngsters soon grow into young, modern farmers who become feed customers.

"With our diversified alfalfa pellet production, coupled with our line of formula feeds for cattle, poultry, sheep, dairy cows and swine, we are a factor in the local area feed picture," says Mr. Laux. "We are gradually expanding the territory served from our plant and reaching more feeders. We invite many of them to come to our plant and observe how we produce our alfalfa pellets and our Elkhorn feeds. Many feeders do come and it helps make them better customers as they see the quality materials that go into our feeds."

WEIGHS ALFALFA — An employee of the mill is shown weighing pelleted bulk alfalfa for regrinding.

USDA Feed Advisory Committee to Meet

WASHINGTON — A forage, feed and seed committee will meet here Nov. 16-18 as a part of the 14th year of annual meetings by the research and marketing advisory committees of the U.S. Department of Agriculture.

This committee—one of 24—was appointed by the Secretary of Agriculture acting under provisions of the Research and Marketing Act of 1946. Committee members represent all segments of U.S. agriculture. They offer guidance to USDA in appraising and planning research and service programs to improve the production, marketing and utilization of agricultural products.

CHECK GRINDER—An employee of the mill (left), and George Remm, production manager, check over the firm's 150 h.p. Gruendler grinder.

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Pacal offers a wide variety of types and styles of hammers to give you more hours of quality grinding and save on replacement costs. Pacal Hammers sharpen as they wear, hold their edge and cut cleaner.

NEW . . . Ask for Pacal's Abrasive Resistant BORALLOY-350 steel sheets and plates for severe production applications. Call or write the Hammer Division.

P&C **PAPER, CALMENSON & CO.**
County Road B and Walnut Street • Saint Paul 13, Minnesota
Telephone: MIDWAY 6-9456

Gilbert Jackson COMPANY, INCORPORATED
BOARD OF TRADE BLDG., KANSAS CITY 5, MO.
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Phone BA 1-0337
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All Feed Ingredients
A Nationwide Service from the Heart of America

Quality ingredients mean confident feeding

WILSON'S RED W BRAND

RED W BRAND Vitagen Feeding Fat

RED W BRAND Vitagen Feeding Fat is invaluable in formulating better rations. It has been proven safe and efficient by many years of scientific feeding... maintained safe by strict production standards. Sell it and feed it with confidence.

RED W BRAND also brings proven economy to feeding; excellent appetite appeal for all animals and poultry. It is packed with high nutritional values.

RED W BRAND Vitagen Feeding Fat is available at all Wilson plants for shipment in tank cars, tank trucks, or 400# steel drums.

Flavor & Odor... typical of fresh cracklings; free of off-odors, such as rancidity and sourness
Quality.....nutritional components 99%+
Color.....white to yellow
Free Fatty Acid.....1% to 3%
A.O.M. Keeping Quality....over 40 hours
Melting Point (Wiley).....About 108° F.
Moisture.....less than 0.2%
Iodine No.....about 50
Cholesterol & Related Compounds (natural unsaponifiables).....0.5%

Animal Protein Concentrates and Vitagen Feeding Fat

The BEST Ingredients Make BETTER Feeds

RED W BRAND 50% Meat and Bone Scraps
RED W BRAND 60% Digester Tankage
RED W BRAND Steamed Bone Meal
RED W BRAND Vitagen Feeding Fat
Write or telephone for quotations on any quantity you need!

WILSON & CO., INC.
CHICAGO • CEDAR RAPIDS • KANSAS CITY • OKLAHOMA CITY
OMAHA • LOS ANGELES • DENVER • ALBERT LEA • MEMPHIS

Convention Calendar

Aug. 14-18—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Aug. 15-19—Florida Poultry Institute; Camp McQuarrie, Fla.; J. S. Moore, Extension, University of Florida, Gainesville.

Aug. 16-17 — Mutual Millers and Feed Dealers Assn.; Hotel Jamestown, Jamestown, New York; sec., Mrs. Donald E. Mattison, P.O. Box 8, Cattaraugus.

Aug. 18—Michigan Cattle Feeders Day; Michigan State University, East Lansing; Hugh E. Henderson, Extension Specialist, Animal Husbandry.

August 19—Ohio Swine Day; Ohio Agricultural Experiment Station, Wooster.

Aug. 22-23—Kentucky Feed Conference; Campbell House, Lexington; sponsored by the Kentucky Grain & Feed Assn. and University of Kentucky; sec., Jack Weber, P.O. Box 425, Lexington.

Aug. 22 - 23 — American Soybean Assn. and National Soybean Processors Assn., joint conference and meeting; Hotel Peabody, Memphis, Tennessee; George M. Strayer, exec. vice pres., American Soybean Assn., Hudson, Iowa, and R. G. Houghtlin, pres., National Soybean Processors Assn., 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 25—Michigan Lamb Feeders Day; Michigan State University, East Lansing; chm., Leonard Blakeslie, professor of Animal Husbandry.

Aug. 26—Purdue Swine Day; Purdue University, Lafayette, Ind.; Dr. J. H. Conrad, Animal Science Dept.

Aug. 29-Sept. 1 — Georgia Poultry Institute; Rock Eagle, Georgia; Milton Dendy, Extension Poultryman, College of Agriculture, University of Georgia, Athens.

Sept. 1 — Illinois State Turkey Growers Assn.; Coe Gaulrapp Turkey Farm, Rock Falls, Ill.; sec., S. B. Swann, Kauffman Turkey Farms, Waterman, Ill.

Sept. 1-6 — International Congress on Nutrition; Sheraton-Park Hotel, Washington, D.C.; sponsored by International Union of Nutritional Sciences; sec., Milton O. Lee, 9650 Wisconsin Ave., Washington 14, D.C.

Sept. 2—Missouri Swine Day; University of Missouri, Columbia; Dr. L. F. Tribble, Animal Husbandry Dept.

Sept. 2 — Illinois Cattle Feeders Day; University of Illinois, Urbana; A. L. Neumann, Animal Science Department.

Sept. 6-9—Feed Microscopy Short Course; University of Missouri, Columbia; chm., G. M. Barnhart, Chief Chemist, State Department of Agriculture, Jefferson City.

Sept. 8-9 — Pet Food Institute; Drake Hotel, Chicago; sec., Clyde Kassens, 333 N. Michigan Ave., Chicago.

Sept. 12-13—Minnesota Animal Nutrition and Health Short Course; University of Minnesota, St. Paul.

Sept. 13 — Iowa Feed Conference; Iowa State University, Ames; chm.; Dr. Virgil Hays, Animal Husbandry Dept.

Sept. 13-15—Dixie Poultry Exposition; Asheville, N.C.; sec., N. B. Nicholson, Monroe, N.C.

Sept. 13-15 — Hatchery Short Course; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., P. O. Box 568, Columbia.

Sept. 14-15—Maryland Feed Servicemen's Conference; University of Maryland, College Park; chm., Wade H. Rice, Extension Service.

Sept. 14-16—National Feed Ingredients Assn.; Liggetts Holiday Inn, Burlington, Wis.; sec., Paul W. Bonewitz, 1023 Equitable Bldg., Des Moines, Iowa.

Sept. 15—All Poultry Industry Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Sept. 16—Missouri Egg Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Sept. 20-21—Iowa Poultry Convention; Veterans Memorial Auditorium, Des Moines; mgr., LeRoy L. Kruskop, 535 East Lincoln Way, Ames.

Sept. 21-22 — Marketing Seminar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

1961

March 8—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

VITAMIN FORTIFY YOUR OWN FEEDS with JERSEE

Never fails to produce GUARANTEED POTENCY results!

Contains necessary Vitamins, Antibiotics, Amino Acids and Trace Minerals to Vitamin Fortify your feeds for only a few cents a bag.

VITAL-MIN for Poultry LAS-O-MIN for Cattle MIN-O-LAS for Hogs

CAF-SUPP

A dependable body building feed containing guaranteed levels of Vitamins A-D and Aureomycin. Simple and economical to feed. Assures guaranteed feeding results.

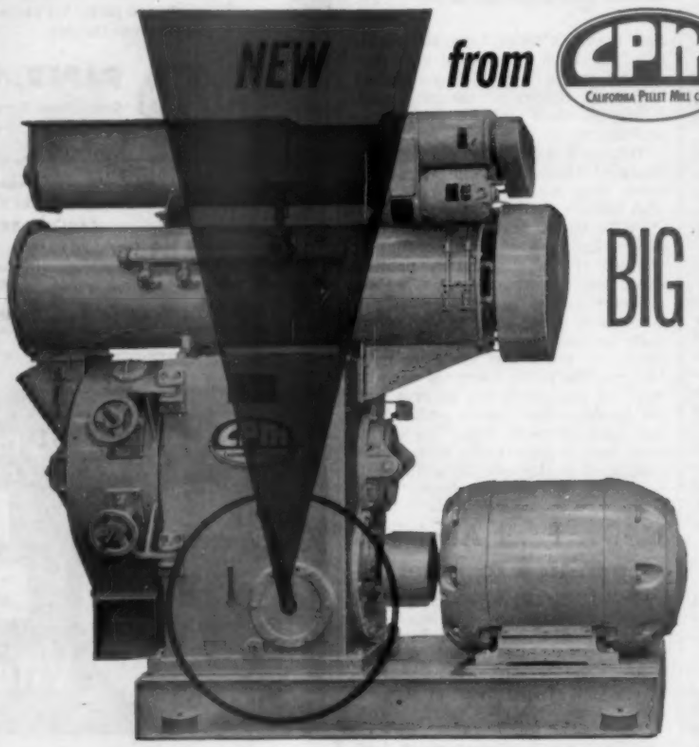
PRE-CAF-SUPP

A COMPLETE MILK REPLACER WITH SWEET MILK SOLIDS—fortified with Aureomycin to help prevent scours and minor digestive disturbances. Packaged in 25 and 50-lb. bags.

WRITE FOR DEALERS' SALES HELPS!

THE JERSEE CO. MINNEAPOLIS, MINNESOTA Established 1901

NEW from CPM California Pellet Mill Co.



THE ONE BIG PELLET MILL THAT DOES TWO BIG JOBS

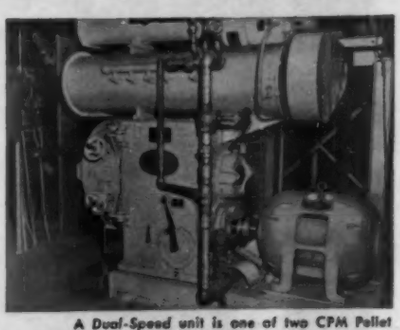
DUAL-SPEED

Great Strength • Great Versatility

For pure ruggedness, plus the obvious advantages of having two-mills-in-one, you just can't beat the new CPM *Dual-Speed* Pellet Mill. Now you shift in seconds to the die speed that meets your particular pelleting need. Choose from these die speed combinations:

LOW RPM	HIGH RPM	LOW RPM	HIGH RPM
132	243	171	400
171	265	265	316
171	316	265	400

Motors 100 or 125 HP, 1800 RPM



A *Dual-Speed* unit is one of two CPM Pellet Mills at the new Welp's Feed Mill in Bancroft, Iowa. Powered with a 100 HP motor, the mill produces 10 to 14 tons of pellet feed per hour.

for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 21-23—Pennsylvania Millers & Feed Dealers Assn.; Hotel Penn Harris, Harrisburg, Pa.; sec., Donald W. Parke, P. O. Box 329, Ephrata, Pa.

Sept. 21-23 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 22 — Minnesota Beef-Grassland Field Day; Rosemount Experiment Station, Rosemount, Minn.

Sept. 22-23 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Sept. 28-29 — Ohio Poultry Assn.; Yough Bldg., Ohio State Fairgrounds, Columbus, Ohio; sec., Bruce R. Davisson, Poultry Dept., Ohio State University, Columbus,

Sept. 29 — Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington; sec., D. C. Henderson, Hills Agricultural Science Bldg.

Sept. 29-30 — Iowa Seed Dealers Assn.; Savery Hotel, Des Moines; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Sept. 30—Nebraska Feed and Nutrition Conference; University of Nebraska College of Agriculture, Lincoln; chm., Dr. John L. Adams, Poultry Husbandry Dept.

Oct. 2-4 — Poultry Industries of Louisiana, Inc.; Bellemont Motor Hotel, Baton Rouge; sec., Clyde Ingram, Knapp Hall, Louisiana State University, Baton Rouge.

Oct. 4-5—Washington Junior Poultry Exposition; Western Washington fairgrounds, Puyallup, Washington; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service, Washington State University, Pullman.

Oct. 4-6 — Northeastern Poultry Producers Council; Exposition and Convention; Onondaga County War Memorial Bldg., Syracuse, N.Y.; Doris Endebrock, Exposition Mgr., 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6 — Northeastern Poultry Producers Council Exposition and Convention; War Memorial Auditorium, Syracuse, N.Y.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-12—Virginia State Poultry Federation; Hotel Roanoke, Roanoke, Va.; sec., Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 11-12—Virginia State Poultry Federation convention and trade show; Hotel Roanoke, Roanoke, Virginia; sec., J. Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 13-14 — West Virginia Feed Dealers Assn.; Blackwater State Park, Thomas, W. Va.; J. Z. Ellison, 801 Willowdale Rd., Morgantown.

Oct. 13-14 — Turkey Short Course and Jr. Market Turkey Show; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 566, Columbia.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20 — Business Management Program; sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Oct. 17-18—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Bert Maxwell, Nulaid Farmers Assn., Petaluma; association office, 1400 Tenth St., Sacramento 14.

Oct. 20-21—Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 20-21—Poultrymen's Institute; Washington State University, Pullman; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service.

Oct. 23-25—Southeastern Feed Production School; University of Georgia, Athens; Harold E. Ford, Southeastern Poultry & Egg Assn., 235

CALENDAR FOR 1960-61

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The efficiency and versatility of changeable die speeds is *only half* the remarkable *Dual-Speed* story. Conceived and built to master the very toughest of pelleting operations, the CPM *Dual-Speed* features extra heavy construction from the bottom up and inside out. Here, without a doubt, is an exceptional machinery value *on the basis of stamina alone.*

MANY ADVANTAGES OF VARIABLE DIE SPEED

Until now, the only really important variable in pelleting has been in die specification, or operation of more than one machine to meet different production requirements.

Now you can pellet high-speed formulas at peak efficiency; yet quickly gear down for various reasons, such as range-cube production, or where sugar, milk by-products, or molasses ingredients call for *slower* die speeds. (Note: Recent tests clearly show that *hard-to-run* formulas of 5/32", 3/16" and 1/4" pellet size are definitely pelleted at better capacity and quality when die speed is *slower than 200 RPM.*)

The *Dual-Speed* is equipped with a choice of die speeds as low as 132 RPM and as high as 400 RPM with a 100 HP or 125 HP, 1800 RPM motor. On an explosion-proof motor, this means a saving of almost $1,000 over the cost of a 1200 RPM motor. With a CPM *Dual-Speed* you're set in seconds for peak efficiency. No cumbersome sheave changes. Simply move the lever and your die speed is changed.

EXTRA-HEAVY CONSTRUCTION FOR TOUGHER PELLETING JOBS

The CPM *Dual-Speed* can handle the most difficult operating assignments on a continuous, day-in, day-out schedule. It takes on tough, abnormal loads easily – and with an extraordinary factor of safety.

A few of its many features include: Extra large quill bearing and massive quill flange to assure deflection-free die mounting; sturdy new demountable die-driving rim positively mounted by deep rabbet fits; heavier, four-piece, easily removable die clamp; increased bearing area on roller shafts for trouble-free service; outer roller supports bigger, heftier; main shaft and shear pin assembly proportionately larger; increased size of feed chute handles big tonnages—even on light-weight materials; entire drive shaft and intermediate shaft assembly is complete in bench-assembled cartridge of new design; pump type, filter-clean gearbox lubrication protects all gears and bearings, with independent lubrication system for pelleting rolls—all these advantages plus many, many more important and exclusive features.

Get the complete Dual-Speed *story from the man who knows how it can best help you—your CPM representative. Call him today. Remember: More California Pellet Mills are sold today than all other makes combined!*

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Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England

Manager Rulon Trost, Jack Thomas Grain and Livestock Co. in Idaho Falls, Idaho puts his CPM *Dual-Speed* into action. This mill operates 10 hours a day, 6 days a week, producing 3/16", 5/16" and 3/8" size pellets.

Charles Hendricks, Manager of Union Seed Co. of Burley, Idaho is shown alongside Union's CPM *Dual-Speed* unit. Mr. Hendricks reports trouble-free, highly efficient performance on a wide range of ingredients.

Piet Bol, Manager of General Mills' Ogden, Utah plant, shifts the die speed on the company's newly installed CPM *Dual-Speed* pellet mill.

Milton R. Cooper, 25-year veteran miller with The Pillsbury Co., Ogden, Utah, checks performance on the plant's CPM *Dual-Speed* unit. Note convenience of gear shift lever.

IT'S EASY TO SELL
Toxite®
... Because it's the BEST-KNOWN, ALL-PURPOSE FARM DISINFECTANT SPRAY
ANDERSON BOX COMPANY
Indianapolis 6, Indiana
MFD. BY TOXITE LABORATORIES, INC.

East Ponce de Leon Ave., Decatur, Ga.

Oct. 25-26 — Indiana State Poultry Assn.; Purdue Memorial Center, Purdue University, Lafayette; sec., Robert L. Hogue, Poultry Science Bldg., Purdue.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Oct. 27-28 — Washington Poultry and Hatchery Assn.; Chinook Hotel, Yakima.

Oct. 27-29—National Swine Industry Conference; University of Kentucky, Lexington, Ky.; chm., Keith Myers, Secretary, National Swine Growers Council, Box 241, Grundy Center, Iowa.

Oct. 28—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Animal Science Dept.

Nov. 2-3—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 2-3—Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, mory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 3—South Dakota Swine Research Day; South Dakota State College, Brookings.

Nov. 3-4 — Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. H. H. Williams, Biochemistry and Nutrition Dept., Savage Hall, Cornell University, Ithaca, N.Y.

Nov. 9-12 — National Renderers Assn.; Statler-Hilton Hotel, Dallas, Texas; sec., Miss Jamie Fox, 30 N. LaSalle St., Chicago, Ill.

Nov. 14-15 — Washington Animal Industry Conference; Skagit Valley College, Mount Vernon, Wash.; John G. Wilson, mgr., Washington State Feed Assn., 814 Second Ave. Bldg., Seattle 4.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Missouri.

Nov. 16-18—Florida Nutrition Conference; University of Florida, Gainesville; chm., Dr. J. P. Feaster, Animal Husbandry and Nutrition Dept.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

Dec. 1-2—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. J. W. Kelly, Poultry Science Dept.; cosponsored by North Carolina Feed Manufacturers Assn., sec., McNair Evans, Box 44, Mocksville.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 15-17—Indiana Grain and Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn., Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10—American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 20-24—Grain & Feed Dealers National Assn.; Washington, D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 10-12—Poultry and Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

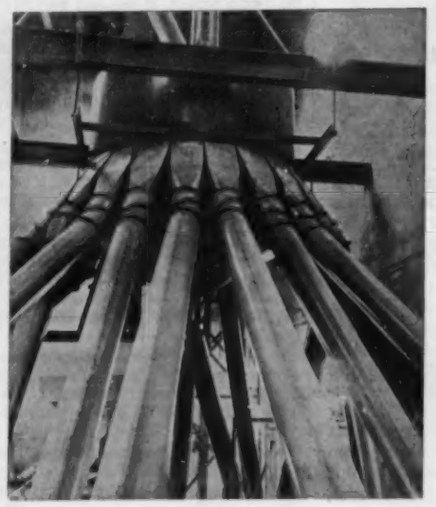
April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 23-28—Grain Elevator & Processing Superintendents; Baker Hotel, Hutchinson, Kansas; sec., Dean

LET GERBER SOLVE YOUR
GRAIN AND FEED HANDLING PROBLEMS

The Gerber Roto Flo Distributor

Patented



This illustration shows a typical Roto Flo installation using reversible elbows and Gerber's high quality bin spouting.

Keep Your Grain Quality Up With the GERBER PORTABLE AERATION UNIT

Patent Pending

Yes—the Gerber Portable Aeration Unit can be the best purchase you have ever made. Low in cost—high in efficiency—easily moved to the point of trouble—and adequate for the job—this carefully designed and adequately tested unit has proven its worth in hundreds of installations. A practical nod down to earth approach to the problems of grain storage—and one which works.

★ GERBER'S REVERSIBLE ELBOW

Save installation time by using Gerber Reversible Elbows. Loosen one nut and adjust elbow to angle desired. Made of Hi Carbon Steel for longer wear. Any size available, 6" and up.

★ 2-WAY ROUND VALVE

Use the Round Gerber Valve and eliminate special square to round transition. Valve can be flanged to connect to flanged spouting. Note the adjustable handle. Outlets can be straight down as shown or at natural angle. Round valve furnished in bucket or basket type only.

★ 2-WAY SQUARE VALVE

Square Valves can be made in either the flop gate style or bucket type. Outlets can be furnished straight down as shown or at natural angle. 6" to 16" sizes available. Special bottom drop out valves can also be furnished.

★ ROUND DEAD STOP DEFLECTORS

Attach Deflector to end of spout to deflect the flow of grain. Long lasting as grain wears against grain instead of metal. Can also furnish self-cleaning Dead Stops.

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416 35TH AVE. N.E. MINNEAPOLIS 18, MINN.
PHONE ST 1-7451

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Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Coccidiosis Up in Georgia Layer, Broiler Flocks

TIFTON, GA.—The incidence of coccidiosis, a parasitical disease in chickens, has picked up in laying and broiler flocks in this south Georgia area during the past two or three months, Dr. W. W. Adams, director of the Georgia Poultry Laboratory here reported.

The poultry laboratory is located at Georgia Coastal Plain Experiment Station's Brighton Road section. Growers bring their diseased chickens to the installation for diagnosis and help in disease control.

Dr. Adams said that in control of coccidiosis it is important to keep litter in the chicken house dry. Use of sulfa drugs is one control measure, he said. He added that a drug to prevent coccidiosis may be used in feeds, but that some growers have overlooked having this product included in their feed formulas.

"Respiratory diseases are off in incidence among south Georgia flocks in comparison with what they were in the winter, but we are seeing some infectious bronchitis," Dr. Adams said. This disease is caused by a virus, and Dr. Adams states that individual circumstances have to be taken into consideration in control measures.

Some fowl cholera is being found in laying flocks, and where it is found, the growers are advised to vaccinate their flocks, the veterinarian said.

Another trouble found lately in some laying flocks in the area is leukosis, the diagnostician said. Leukosis is a sort of tumor and not much can be done about chickens that develop it. The best solution is to use breeding stock as nearly free of the disease as possible. Most of it is found in laying flocks.

Dr. Adams said some growers had been losing chickens from heat prostration because of overheating in the houses. He advises growers to put electric fans in their houses when the weather is extremely warm. The heat found inside chicken houses varies with the type insulation, location and other factors.

Greek Educators Make Tour of U.S.

AMARILLO, TEXAS—The newly founded U.S. Feed Grain Council, representing major segments of the American grain industry, has launched a global market development program.

Under the program, two Greek agricultural educators are touring the U.S. They are Demeter E. Hadjis, director of instruction, and Alexander Andreou, professor of animal husbandry, Thessalonica Agricultural and Industrial Institute, Salonica, Greece.

Information they glean from their visits with U.S. grain feeders, growers and processors will not only be used in Greek educational and agricultural extension programs, but also at the International Fair at Salonica Sept. 5-17.

GREEK VISITORS—Porter Holmes, Amarillo, Texas, grain man, demonstrates the use of a moisture tester used by the grain trade to insure quality. His audience includes Alexander Andreou, center, and Demeter E. Hadjis, right, Greek agricultural educators, who are visiting the U.S. as guests of the U.S. Feed Grains Council. They will relay the American feed grain story to their countrymen under a global feed grain market development program sponsored by the council.

Goal of the council is the stimulation of markets with the eventual placement of American grown feed grains—corn, grain sorghum, oats and barley—in livestock feed bins extending from Europe to the Orient.

"The council has sights on a marketing target no smaller than the growers' ability to produce and the grain industry's ability to serve," Bill Nelson, the council's executive director, said.

Providing overseas grain industry leaders with a first hand knowledge of balanced livestock and poultry rations as fed American style is one of the keys that will open market development doors abroad, Mr. Nelson said, in explaining the current visit of two agriculturalists from Greece.

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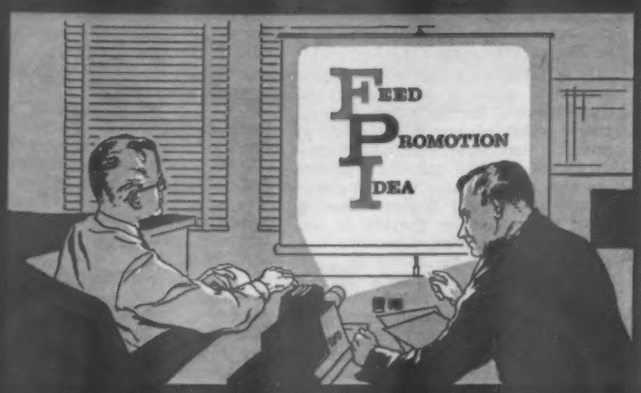

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NT-6-3

A Review

ENZYMES IN POULTRY FEEDS

By Dr. Leo S. Jensen
Washington State University

Considerable research work has been conducted on the use of enzymes in feeds for animals during the past three years. The Food and Drug Administration has recently ruled that supplements containing enzymes may be used in animal feeds. It is the purpose of this article to review the work reported on enzyme supplementation and water treatment of feeds for poultry.

Dr. L. S. Jensen

Because barley is the chief economically available grain produced in the Pacific Northwest, studies were undertaken at Washington State University in an attempt to improve its value as a feed ingredient for poultry. A series of experiments involving removal of the fibrous hull of barley, addition of certain amino acids to rations containing barley as the only grain, pulverizing, steam rolling and other treatments altered very little the value of barley as measured by growth and feed efficiency of chicks and poults (1). (Numbers in parentheses designate references at end of article.) Growth and feed efficiency were comparable to a ration containing corn when sufficient fat was added to the barley ration, but addition of fat to the ration containing corn also improved performance of chicks. In 1957, it was found that a water treatment of barley markedly improved its utilization by chicks (2) and also, that addition of a fungal enzyme preparation brought about a similar improvement (3).

At about the same time Balloun and Baker (4) and Miner and Denton (5) reported no response from supplementing a chick diet with various enzymes. A similar finding was reported by Bogdonoff at the 1957 Informal Poultry Nutrition Conference. These workers used corn as the major cereal grain in their diets, and it has been reported by Fry et al. (6) that diets based on corn did not respond significantly to enzyme supplementation. Using hull-less barley, Dobson and Anderson (7) obtained improvements in chick growth by addition of enzymes or by water treatment of barley. They contended that a greater improvement was obtained when the barley was water treated with an extract of corn than when water alone was used. The effectiveness of enzymes for improving the nutritional value of barley was confirmed by Wharton et al. (8), Arscott (9) and by others.

Development of Use

The use of enzyme supplements for poultry feeds is not new, as reports were published in the 1920's that growth and egg production of chickens were improved by addition of an enzyme supplement called "Protozyme" (10). In 1946, Hastings (11) reported improved chick growth and feed efficiency when an enzyme preparation of fungal origin was added to a high fiber mash but not to a low fiber mash. It is probable that results obtained by these early workers were complicated by inadequate levels of vitamins and absence of antibiotics. The enzyme preparations used could have contributed vitamins as well as enzymes.

After the report that barley and other grains could be improved by enzyme supplementation, it soon became apparent that not all barley samples were uniformly improved by this procedure. Differences obtained were not due to variety of barley, because a uniform response to both enzyme supplementation and water treatment was obtained with nine different varieties of barley grown in the vicinity of Washington State University (12).

Later, barley samples were obtained from different parts of the U.S. and Canada for a comparative test with chicks. It was found that the barleys grown in the western part of the U.S. were uniformly and significantly improved by both enzyme supplementation and water treatment, but that barleys grown in such places as Arkansas, New York and Ontario were significantly improved only by water treatment (13). Growth of the birds fed the untreated eastern barley was much higher than that of birds fed untreated western barley. Differences in response to enzyme supplementation between barley grown in the Midwest and West were also reported by workers at the University of Wisconsin (14).

It is therefore apparent that geographical area of production and climatological factors affect the nutritive value of cereal grains. It is probable that barley grown in eastern areas had greater microbial growth on the kernel than western-grown grains because of higher humidity prior to and during harvest. It was shown that autoclaving eastern barley caused a reduction in chick growth to a level comparable to that of birds fed western barley (13), and that addition of enzyme supplement gave a significant improvement. Therefore, a heat labile substance (probably enzyme) was present in eastern barley, which accounted for the better growth obtained without supplementation.

The fact that a marked increase in growth and in feed utilization was obtained by adding enzymes to western barley suggested an increase in utilization of the energy content. Untreated pearled barley was found to have 1370 calories of metabolizable energy per pound. Addition of fungal enzyme increased this to 1696 calories, and water treatment of the barley increased it to 1728 calories per pound (15). Therefore, available energy was greatly increased. Chicks allowed to choose feeds containing corn or untreated barley selected the corn diet four to one. When barley was treated, however, the birds selected equal quantities of the corn and treated barley feeds (16).

It was attractive to postulate that the improvement by enzyme supplementation was due to the presence of large quantities of fiber in the diet. It had been reported by Hastings (11) that high fiber diets were necessary for a response to enzymes. This idea, however, did not quite fit with data obtained in our laboratory, since a marked response was obtained by supplementing a diet containing pearled barley with enzyme (3). Pearled barley is very low in fiber. Using diets similar to those of Hastings, it has been found that a high level of fiber was not required in the diet in order for fungal enzymes to give a growth response with chicks. Rather, the presence or absence of barley per se was the determining factor (17).

Many Tested

Many different enzyme preparations have been tested for their effectiveness in improving the nutritional value of cereal grains. The most effective ones come from two main sources—fungal (largely Aspergillus oryzae) and bacterial (largely Bacillus subtilis) fermentation. Barley malt has also been shown to be effective but a much higher level must be added (18, 14). It is possible that the effectiveness of malt was due to enzymes produced by microbial growth during the germination process rather than by enzymes endogenous to barley. Enzyme supplements that are effective in improving barley contain a multiplicity of enzymes, and it has not been determined yet what specific enzyme(s) is responsible for the improvement. Crystalline alpha amylase has been shown to be inactive (12, 19). A small response was obtained with a crystalline proteolytic enzyme produced by a Bacillus subtilis organism, but the maximum response obtained with this enzyme was less than half that obtained with crude enzyme preparations (20). It is possible that an enzyme not previously characterized will be found to be responsible for the major part of the improvement.

Barley and other cereal grains can be improved by either enzyme supplementation or water treatment. In general, a greater growth response has been obtained in our laboratory by water treatment than by enzyme supplements. Considerable work has been conducted at Washington State in an attempt to determine the mechanism by which water treatment improves barley. It has been found that microbial fermentation plays a major part, if not the only part, in this improvement (21, 22). Adding water to ground barley and drying in an oven at 70° C. provides a suitable medium for bacterial growth. The numbers of bacteria in barley treated in different ways were correlated positively with improvement in chick growth (23). The nutritional value of sterilized barley was improved when inoculated with an unidentified gram positive rod bacterium isolated from dust in the feed preparation laboratory (21), or with B. subtilis (ATCC 9943). Inclusion of high levels of certain antibiotics in barley prior to water treating interfered with the nutritional improvement obtained by ordinary water treatment (23).

It is therefore evident that microbial fermentation plays an important role in the improvement of barley and other cereal grains by water treatment. Variations in the response to water treatment of barley would be expected to vary among laboratories, depending upon presence of a suitable microorganism for inoculating the barley and the right environment for multiplication of the microorganism. That microorganisms do not simply manufacture enzymes which later act on barley in the digestive tract of the chick was shown by Thomas et al. (21) when sterilization of water treated barley did not alter the improvement obtained by water treatment. This treatment should have inactivated enzymes present. Therefore, an irreversible improvement had occurred in the barley.

Antibiotic Synthesis

The fact that water treated barley has generally given a better response than enzyme supplemented barley is now believed due to antibiotic synthesis during water treatment (24) plus the action of enzymes. Antibiotics commonly used in feeds have generally failed to give a growth response for some time now in the chick laboratories at Washington State. On the other hand, antibiotics not previously used in the laboratory, or infrequently used, have given a definite growth response (25). In most of the work with barley, penicillin was used as the antibiotic, and this has been generally ineffective for several years in our laboratory. A combination of bacitracin (an antibiotic which has been quite effective for the past three years in this laboratory) and a fungal enzyme supplement gave results similar to that obtained with water treated barley. Assay of water treated barley showed it to contain substantial quantities of antibiotic activity.

Although barley has been the cereal grain most used for studies with enzymes and water treatment, other cereal grains and by-products have been reported to be improved by these treatments. Using turkeys, Fry et al. (6) showed that wheat and rye were improved, as well as barley. Oats and wheat middlings were improved by enzymes (26, 27). Work at Ohio State showed that water treatment of corn and wheat improved growth, but supplementation with enzymes did not (28). Since these workers did not include antibiotics in their basal ration, it is possible that the improvement by water treatment was due to synthesis of antibiotics rather than enzymes. Lepkovsky and Furuta (29) have recently reported that birds restricted to two hours feeding a day grew much better when fed a water treated feed than when fed a regular mash. A smaller but still significant differ-

(Turn to page 44)

NUTRITIONISTS—The 1961 Midwest Nutrition Conference committee, at its second planning session, has made further arrangements to include some of the nation's top nutritionists as participants, it has been reported. Taking part in the meeting were, from the left: B. D. Eddie, Superior Feed Mills, publicity committee chairman; Dr. Harold L. Wilcke, Ralston Purina Co., general chairman; (standing) Dr. H. E. Bechtel, Dawe's Laboratories, exhibits chairman; Dr. J. Russell Couch, Texas A & M College, program committee chairman; and George P. McCarthy, Allied Mills, Inc., exhibits committee member. Exhibits dramatizing contributions of chemicals to food supply, the agricultural-industrial revolution, food as a "good buy" and careers in agriculture today will be a special feature of the Centennial Nutrition Conference.

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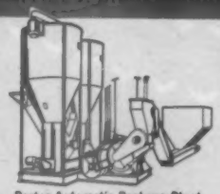

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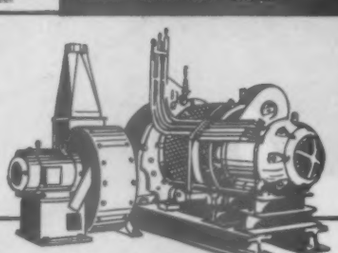

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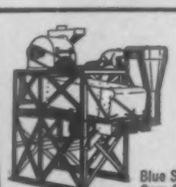

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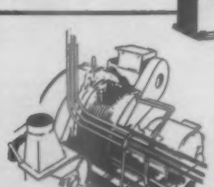

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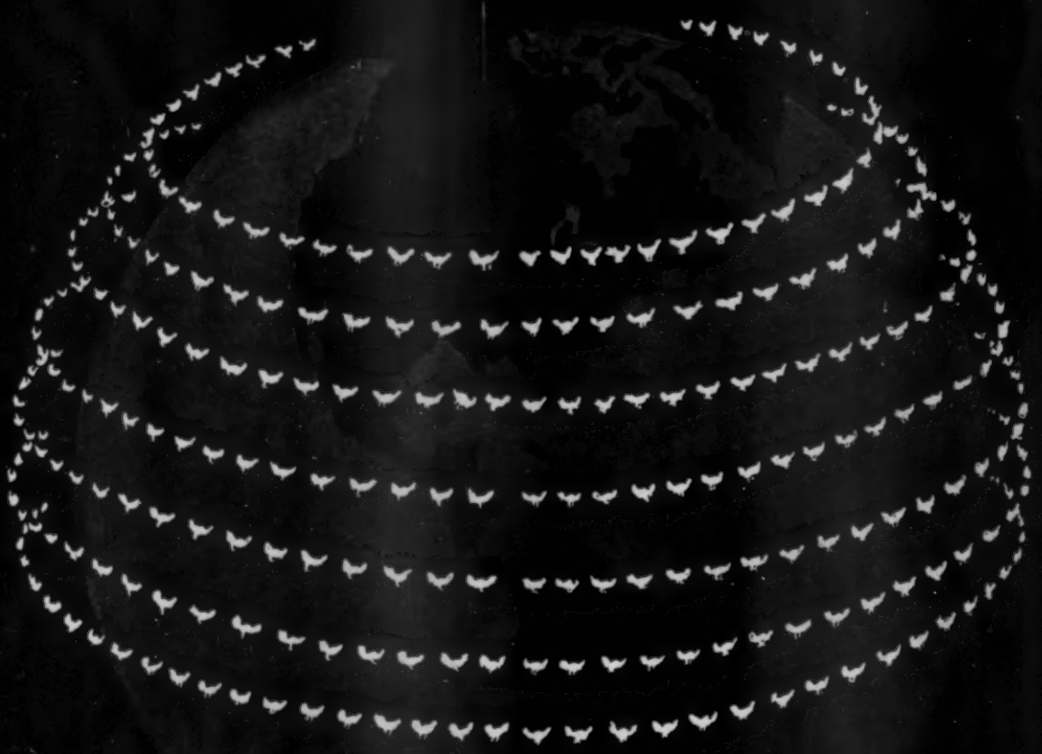

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ence was obtained when birds were fed the two feeds ad libitum.

Recent studies have been conducted on several samples of wheat grown in the Northwest (30). Seven of the eight samples studied were significantly improved by water treatment, but only three responded to enzyme supplementation. Chick experiments with wheat milling fractions showed that water treatment improved utilization of all milling fractions except flour. Addition of enzymes improved growth of chicks fed bran and wheat mill feed fractions. This is in contrast to results obtained with barley where a significant response was obtained by water treating or enzyme supplementing of all milling fractions (31).

Because several cereal grains and by-products from cereal grains were improved by enzyme supplementation or water treatment, it was hoped that other feedstuffs generally low in feeding value for poultry might be improved by enzymes. Although linseed meal is improved by water treatment, supplementation of a diet containing high levels of linseed meal with enzymes failed to improve growth or feed efficiency (32). Water treating of cull peas (33), cull beans (34), and garbanzo (35), or enzyme supplementation of diets containing these feedstuffs, failed to improve growth or feed efficiency. All of these three ingredients, however, were improved by autoclaving.

Arscott and Rose (36) have recently reported results on enzymes with broiler chicks. They found that addition of fat to a diet containing barley, pelleting of the mash, or addition of enzymes, all improved growth and feed utilization. The best results were obtained by a combination of all three. A slight reduction in water consumption was observed with birds fed enzymes, and an improved litter condition was also evident. Another report from the same laboratory suggested that barley contained an inhibitor (37).

Laying Hen Studies

After it was reported that feeding value of barley could be improved for chicks by enzymes and water treatment, it was anticipated that an improvement also would be obtained for laying hens. It had been reported that barley was about 83% of feeding value of corn for laying hens (38). In studies with small numbers of hens, Nelson and Hutto (39) found that addition of enzymes to a barley ration, or the use of water treated barley, increased egg production and feed efficiency. Extensive studies by Berg (40, 41) have failed to show any beneficial effects of enzymes for laying hens, other than an improvement in litter condition. In one study with water treated barley, a slight improvement in feed efficiency was observed. Therefore, it appears that the adult hen is able to utilize barley more efficiently than the young chick. The reason for this is not apparent.

A report published in Germany in 1958 (42) indicated that birds fed papain (a proteolytic enzyme) showed increased proteolytic activity in the blood and tissues. It was felt that since proteolytic activity was found in the tissues, in vivo tenderization of meats might occur by feeding birds proper levels of papain before slaughter. In studies at Washington State (43), no evidence was obtained for improvement in tenderness of fryers by either giving a capsule of papain 24 hours before slaughter or feeding birds several different levels in the feed during the entire growing period. In a limited study with turkeys, there was no effect on proteolytic activity of the blood serum when measured at different intervals up to eight hours after oral administration. From these results, it appears that papain does not have much possibility for improving tenderization of poultry meat when given orally. The reason for the positive responses in enzyme activity in the tissues and blood by the German workers is not clear, but perhaps the source of papain may be a factor.

Because enzymes are being sold commercially for use in poultry feeds, it is necessary to have some means for determining the potency of the various enzyme supplements. As of now, the only meaningful measure of potency of enzyme supplements is biological tests with chicks fed Western barley. No laboratory test, not using chicks, has any meaning at the moment. Therefore, it may be necessary to designate a standard enzyme material as a reference, just as is now done for some vitamins.

In addition to use of enzymes for poultry rations, considerable interest has been generated in the possible use of enzymes for improving growth rate and feed efficiency of beef cattle. Large responses to enzyme supplementation have been obtained at a number of laboratories, but many others have failed to show any improvement. The reason for the great variation in response to enzymes with beef cattle is not apparent. Most of these reports have appeared as news releases, rather than as scientific publications, so it is difficult to compare conditions under which the experiments were conducted. It appears that beef cattle research with enzymes is at the stage similar to poultry research just prior to the finding that the source of barley has an important influence on results obtained.

In summary, considerable work has been conducted during the past few years on enzymes for poultry feeds. Barley grown in the western states, as well as other cereal grains and cereal by-products, are improved by enzyme supplementation or water

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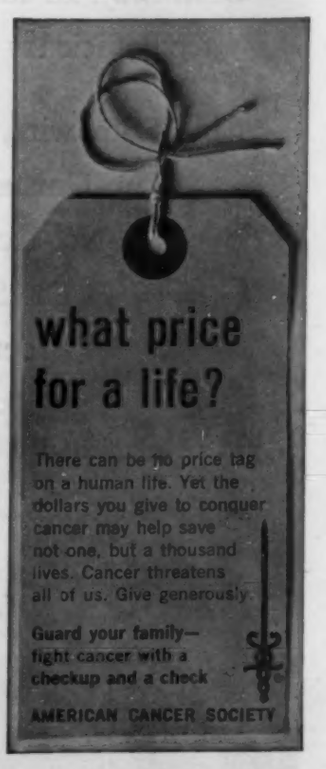
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treatment. Apparently, adult birds do not respond to treatment of barley. The greater effectiveness of water treatment versus enzyme supplementation is now believed due largely to enzyme action plus the synthesis of an effective antibiotic for growth stimulation. Further work is needed to determine the function of enzymes in improving barley for poultry and to determine the role of enzymes for beef cattle and other animals.

v v

REFERENCES

1. Fry et al. 1958. Poultry Sci. 37:281.
2. Fry et al. 1957. Proc. Soc. Exp. Biol. & Med. 95:249.
3. Jensen et al. 1957. Poultry Sci. 36:919.
4. Balloun and Baker, 1957. Poultry Sci. 36:302.
5. Miner and Denton, 1957. Poultry Sci. 36:1321.
6. Fry et al. 1958. Poultry Sci. 37:372.
7. Dobson and Anderson, 1958. Poultry Sci. 37:1199.
8. Wharton et al. 1958. Fed. Proc. 17:497.
9. Arscott, 1958. Proc. Ore. Animal Industry Conf., 38.
10. Clickner and Follwell, 1926. Poultry Sci. 5:241.
11. Hastings, 1946. Poultry Sci. 25:584.
12. Willingham et al. 1959. Poultry Sci. 38:539.
13. Willingham et al. 1960. Poultry Sci. 39:103.
14. Leardal et al. 1959. Poultry Sci. 38:1221.
15. Leong et al. 1958. Poultry Sci. 37:1221.
16. Fry et al. 1958. Poultry Sci. 37:624.
17. Leong et al. 1960. Poultry Sci. (in press).
18. Berg, 1958. Proc. Wash. Animal Industry Conf., 13.
19. Willingham et al. 1958. Poultry Sci. 37:1253.
20. Leong et al. 1959. Poultry Sci. 38:1221.
21. Thomas et al. 1960. Proc. Soc. Exp. Biol. & Med. 103:198.
22. Thomas, 1959. Poultry Sci. 38:1254.
23. Thomas, 1960. M. S. Thesis, Wash. State Univ.
24. Willingham et al. 1960. Abstracts, 49th Annual Meeting, Poultry Sci. Assn.
25. McGinnis et al. 1958. Poultry Sci. 37:810.
26. Berg, 1957. Proc. Wash. Animal Industry Conf., 17.
27. Fritz et al. 1959. Poultry Sci. 1205.
28. Adams and Naber, 1959. Poultry Sci. 1185.
29. Lepkovsky and Furuta, 1960. Poultry Sci. 39:394.
30. Leong et al. 1960. Abstracts, 49th Annual Meeting Poultry Sci. Assn.
31. Willingham, 1960. Unpublished results, Wash. State Univ.
32. Jensen, 1960. Unpublished results, Wash. State Univ.
33. Kienholz, 1959. M. S. Thesis, Wash. State Univ.
34. Riley, 1960. M. S. Thesis, Wash. State Univ.
35. Cuca, 1960. M. S. Thesis, Wash. State Univ.
36. Arscott and Ross, 1960. Poultry Sci. 39:93.
37. Arscott et al. 1960. Poultry Sci. 39:268.
38. Berg et al, 1956. Wash. Agric. Exp. Sta. Tech. Bull. No. 22.
39. Nelson and Hutto, 1958. Poultry Sci. 38:1229.
40. Berg, 1959. Poultry Sci. 38:1132.
41. Berg, 1959. Proc. Wash. Animal Industry Conf., 41.
42. Scharpenseel et al. 1958. Archive Fur Geflugelzucht und Kleintierkunde 7:2.
43. Nelson et al. Unpublished results, Wash. State Univ.

Sale of Elevator in Oregon Announced

HAINES, ORE.—The sale of the Haines Commercial Elevator Co., by E. C. Miley and G. M. Whitney, Athena, Ore., owners, has been announced.

Purchasers were Al Lamb and H. D. McCurdy, Lexington, Ore., and W. E. Melena, Ione, Ore. Mr. Lamb and Mr. McCurdy are associated with the Morrow County Grain Growers, as manager and assistant manager, respectively. Mr. Melena is a contractor and builder in Ione.

The Haines Commercial Elevator Co. was established by Lee A. Duncan in the early part of the century, and successfully operated by him until his retirement when he sold it to the Athena men.

The new owners indicated no immediate personnel changes. The name will be changed to Haines Grain & Feed Co.

Raymond Ward who has been manager of the concern under the former ownership will continue in that capacity.

Mr. Miley and Mr. Whitney will return to Athena, Ore., where they have farm and business interests.

POULTRY CORPORATION

DOVER, DEL.—Delmarva Poultry Industries, Inc., filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is $100,000. Tunnell & Raysor, Georgetown, Del., is the resident agent.

Arsenic Poisoning Found in Georgia

ATHENS, GA.—Arsenic poisoning of layers has been diagnosed in Georgia this year. Original observation which led to the diagnosis was made by Jim Caylor, a poultry graduate of the University of Georgia and an employee of a Georgia feed mill, according to Arthur Gannon, extension poultryman and head of the extension poultry department at the University of Georgia.

This poisoning occurred where poultrymen built their laying houses on cotton land that had been frequently treated with arsenic cotton dust. Even though dirt floors had been covered with shavings, hens often dug down to the soil through the shavings.

Some of the hens reportedly developed leg weakness and had unthrifty appearances, Mr. Gannon said.

The diagnostic laboratory could find no disease agent and drugs and antibiotics were of little value. When a sample of dirt was sent to the state toxicologist, it was discovered that arsenic was present.

Mr. Gannon commented that pullets or turkeys grown on range which develop leg weakness may be suffering from arsenic poisoning. In such cases, the pasture on which they are grazing may have been an abandoned cotton field that contained arsenic from previous spraying with the poison.

If difficulties are experienced in the laying house, it is recommended that several inches of the dirt floor be removed and that river sand be used to fill. With outdoor ranges, if it can be proven that the soil contains arsenic, birds should be moved to another range, Mr. Gannon stated.

OPEN NEW BUILDING

WELLMAN, IOWA — G&S Feed Service held its grand opening recently in its new building.

New Mill Operating

HERMISTON, ORE. — The new Berg Bros. grinding mill is now in full production and the facility contains some new equipment besides modernized machinery.

The plant will produce complete ration feeds and do custom processing of farmers' grain for customers in eastern Oregon. The building measures 40 ft. by 100 ft., not including the basement, and the elevator is 94 ft. high. The plant is situated on a 10-acre site. Berg Bros. has been operating in Hermiston for 15 years. Al Berg is president of the plant, which is locally owned and operated.

Show New Products

MANCHESTER, IOWA — Twenty-two distributors and representatives attended the recent annual Chief Spreader distributor meeting here. Several previously unannounced additions to the Henderson Manufacturing Co. line were shown.

Now, sell "MORE LEAN" in your hog feeds!

EXCLUSIVE M-N-C BENEFITS BRING PREMIUM MARKET PRICES

M-N-C provides the meat producing factor recommended by leading Danish nutritionists for leaner hogs that command premium market prices. With M-N-C (partially delactosed whey product) in the ration, hogs will gain faster—maintain general conditioning from weaning to market.

1. M-N-C contains an ideal balance of the essential amino acids that make protein function with maximum effectiveness.
2. M-N-C supplies a sufficient level of Lactose, the carbohydrate of choice.
3. Pound for pound, M-N-C offers a higher content of natural milk vitamins and minerals than any other milk type supplement.

M-N-C's smooth, even texture assures uniform high quality, color and distribution in mixed feeds. So put more *sell* in your feeds—write or wire for information about M-N-C today.

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APPLETON, WISCONSIN, *World-Wide Supplier of Quality Milk Products*

DIVISION OF DAIRIES, INC.

32 PLANTS *Coast to Coast*

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Pit Augers • Elevator Legs • Mixers • Scalpers •
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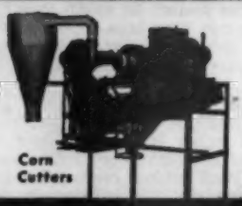

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MANUFACTURERS OF QUALITY MILLING EQUIPMENT SINCE 1930

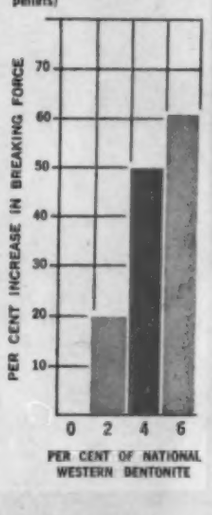
...Increase Production
...Increase Hardness
...Reduce Fines

with NATIONAL* Western Bentonite

Baroid Chemicals' Feed Research Program has found that 2-6% NATIONAL Western Bentonite in ranch cube formulas increases pellet production and hardness while reducing "fines."

The use of NATIONAL Western permits a wide latitude in the choice of combined production rate improvement and increased hardness. Production can be increased 25% while maintaining the same pellet hardness, and pellet hardness can be increased as much as 50% at established production rates.

INCREASE IN HARDNESS OF 20% PROTEIN CATTLE FEED PELLETS WITH NATIONAL WESTERN BENTONITE (hot extruded pellets)



The accompanying chart shows the increase in pellet hardness with varying percentages of NATIONAL Western Bentonite included in the feed formula.

You can obtain more detailed data on the use of NATIONAL Western Bentonite in ranch cubes by mailing the coupon below.

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Veterinarians Face New Challenges, Says Merck Researcher

HALIFAX, NOVA SCOTIA—"Veterinarians who are prepared to meet the needs of growing specialization and integration in agriculture face broader opportunities than ever before," Dr. Laurent Michaud of the Merck Sharp & Dohme Research Laboratories Division told a recent meeting of Canadian veterinarians.

Dr. Michaud, manager of animal science nutrition research at the Rahway, N.J., laboratories, of Merck & Co., Inc., spoke at the 1960 convention of the Canadian Veterinary Medical Assn.

"New trends in farm production with mechanization, specialization and integration have increased the need for veterinarians in practice, research, veterinary colleges, medical schools, biological research centers, government experiment stations and industrial laboratories," he declared.

"There is a need for specialized veterinarians in applied nutrition, parasitology, bacteriology, pathology and animal husbandry.

"In the future, I am sure that more and more of us will join cooperative efforts to advise on improved production techniques, and to prevent diseases on a large scale, on a scale proportionate to the huge herds and flocks that will be the basis of our new agriculture," Dr. Michaud said.

Dr. Michaud called feed medication an established procedure that is economically sound, practical and useful.

"The veterinary profession does not object to the use of feed additives which are considered nutrients, such as proteins, carbohydrates, fats, vitamins and minerals," he pointed out, "and yet these very compounds may prevent or cure a multitude of diseases and abnormalities."

He said that the advantages offered by the addition of growth stimulants and disease preventives to feedstuffs represent millions of dollars to farmers.

Dr. Michaud pointed to the development of coccidiostats as an example of preventing severe outbreaks of disease by adding a drug to the diet as a standard ingredient.

Cargill Begins Work On Dock Facilities

TOLEDO, OHIO—Construction of new dock facilities to load grain-hauling ocean vessels has begun at the 2-million-bushel export elevator here of Cargill, Inc., nationwide agricultural products firm.

Initial work, under contract to the marine construction firm of Merritt, Chapman and Scott, entails placement of steel and concrete foundations for future building of five structural steel loading towers. Also in the first contract is building of four steel "breasting cells" to protect the loading towers and to provide bumping surfaces for moored vessels.

The grain company, which did its own engineering for the project, said each of the five dock-tower foundations will be made by sinking to some 60 ft. six circular pipe pilings of steel, then filling each with concrete and topping the whole with a concrete cap measuring 20-by-21 ft.

The four breasting cells, placed on the water side of the elevator's existing 560-foot dock, will also be circular, made of interlocking steel pilings.

Contracts have been let only on the present phase of construction, with lettings for a second, larger phase planned for late August. The second phase, still not defined in all detail, will include the loading towers themselves, conveying equipment from the elevator to and between the towers and various internal improvements to speed the installation's over-all vessel loading capacity. The total job is planned for completion before the opening of next year's Seaway shipping season.

Iowan Named by Soybean Council

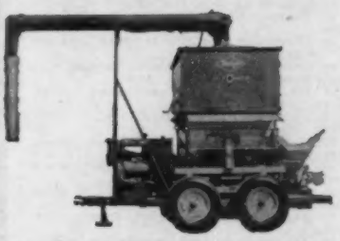
WATERLOO, IOWA — Soybean Council of America has named R. W. Fischer, Onawa, as assistant to the president, it has been announced at the association's headquarters here. Howard L. Roach is president.

R. W. Fischer

Mr. Fischer has several years of experience as a businessman in the sales management and sales promotion fields and is a former employee of the U.S. Department of Agriculture.

He is a western Iowa farmer and was a charter member and first chairman of the Iowa Farm Council. He later served as vice president of the council and as chairman of its foreign distribution committee.

HELP LARGE FEEDERS PROCESS YOUR CONCENTRATE



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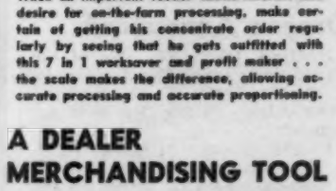
When an important feeder shows interest and desire for on-the-farm processing, make certain of getting his concentrate order regularly by seeing that he gets outfitted with this 7 in 1 worksaver and profit maker . . . the scale makes the difference, allowing accurate processing and accurate proportioning.

A DEALER MERCHANDISING TOOL



Dealers use MIX-O-VATORS too

Here's what one dealer has to say about Mix-O-Vator . . . "We've had our Mix-O-Vator in operation for about 6 months. . . . We grind and mix about 45 tons a week through it. Because of the scale, it is possible to grind and mix to whatever formula desired. Farmers like the service we are able to provide."

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Gentlemen:
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☐ Send information on Bulk Trucks
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Address .....
City ..... State .....

MIXERS — The equipment installed in the newly opened testing laboratory includes the horizontal mixers with varispeed drive units shown here.

Sprout-Waldron Opens Laboratory

MUNCY, PA.—Sprout, Waldron & Co., Inc., here has placed a new testing laboratory in operation, according to announcement by the firm. The laboratory is located in a four story building with 25,000 sq. ft. of floor space, just a block away from the main manufacturing plant.

In an attempt to approach actual in-plant conditions, full size commercial machines are installed in such a way that sufficient volumes of material can be handled to give accurate capacity and finished product data.

Sprout-Waldron manufactures size reduction, size classification, mixing and blending, pelleting and materials handling equipment for the pure and animal food plants, chemical and processing industries and pulp and paper mills and it followed that to be in a position to offer complete testing service, different types of units manufactured should be installed.

Each machine is installed with individual drives and, where essential varispeed drive units are used to enable determination of optimum operating speeds for different materials.

In addition to the various machines there is a boiler to provide steam when required in testing.

To operate the laboratory, a permanent staff is maintained and, in addition, field servicemen are being used in a dual role to bring to the laboratory the experience gained in the field working with actual customers' problems.

Laboratory work is reviewed by a member of the engineering staff and each test is summarized in a written report, a copy of which the customer receives at the conclusion of the test. Results are confidential.

The laboratory is run on an appointment basis.

TESTING—Sprout, Waldron & Co., Inc., has just opened a testing laboratory in this four-story building with 25,000 sq. ft. of floor space one block from the main manufacturing plant in Muncy, Pa.

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Fleischmann's Irradiated Dry Yeast
The quality and economical source of Vitamin D-2 for 4-footed animals. Every particle contains Vitamin D-2, thereby insuring splendid distribution.
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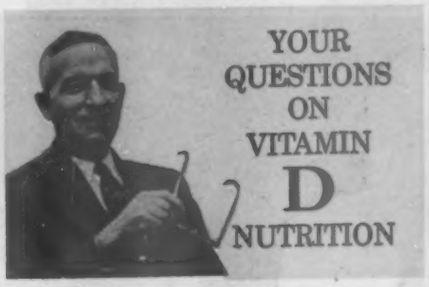
"It's good business to do business with Amburgo"

Here's what we are telling your customers about
THE IMPORTANCE OF VITAMIN D NUTRITION
In this educational series to farmers and feeders, Dr. G. C. Wallis answers important questions about Vitamin D Nutrition.

Dr. Wallis Answers



Q: How can I be sure each pound of my feed has the same amount of vitamin D as the next pound will have?

A: Uniform distribution depends mainly upon the physical properties of the vitamin D concentrate, proper mixing methods and efficient equipment. By careful management, mixing, adequate for all practical purposes, can be readily achieved. The extremely small particle size and free-flowing characteristics of Fleischmann's FIDY Irradiated Dry Yeast help tremendously in getting good distribution.

Q: At what age of animal is vitamin D most important?

A: Lack of adequate vitamin D can be disastrous at most any age. Formerly, vitamin D deficiency was thought to occur only in young growing animals. Research has now shown that mature dairy cows need vitamin D. Difficulties from inadequate vitamin D have also been observed in older beef cattle, sheep and swine.

Q: Is there a relationship between the daily feeding of a higher level of vitamin D, 8,000 units per pound of feed or more, and the possible control of milk fever without having to feed the massive doses recommended for the short period before freshening?

A: Recent careful research provides reasons why benefits from year around feeding of higher levels of vitamin D might be expected. Older cows have previously unrecognized difficulties in absorbing and utilizing calcium. Extra vitamin D helps. The results of clinical and practical studies on the control of milk fever by fortifying regular dairy rations at higher levels are very encouraging.

Q: Does artificial drying lessen the vitamin D content of hay?

A: Figured on a dry matter basis, the vitamin D content of artificially dried hay is probably about the same as was in the green forage before drying. During field curing vitamin D tends to increase but the amount is not as great as commonly supposed. Reports on 13 samples showed an average increase of only 115 units per pound during field curing. Such an increase in vitamin D in a whole ton of hay would be worth only about ½ cent.

Q: What is the difference between brewers dried yeast and irradiated dry yeast?

A: Brewers dried yeast is a by-product from the brewing of beer and ale which is used in feeds mainly as a source of the B-complex vitamins and protein. FIDY Irradiated Dry Yeast is a primary grown yeast which has been subjected to ultraviolet irradiation under carefully controlled conditions to produce vitamin D_2. It is used in four-footed animal feeds solely as a source of vitamin D.

A. C. Wallis

For more complete answers to any of these questions write to Dr. G. C. Wallis, Director of Nutrition, Agricultural Department, Standard Brands Incorporated, 625 Madison Avenue, New York 22, N. Y.

Standard Brands Incorporated

Today's feeds have added nutritional fortification to assure proper levels of important nutrients required for good production.

Fleischmann's FIDY Irradiated Dry Yeast is a rich and economical source of vitamin D_2—easy to use, dependable in potency, outstanding in dispersion qualities.

Formulate your feeds with FIDY Irradiated Dry Yeast—for reliable Vitamin D fortification.

NEW IDEAS VITAMIN D FEEDING
Research provides new ideas on:
- The older cow and sustained high production.
- The prevention of milk fever.
- The improvement in absorption and utilization of calcium and phosphorous.
- The variability of vitamin D from natural resources.
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Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Results of Washington State Sheep, Swine Research Told

PULLMAN, WASH.—Latest developments in sheep and hog research at Washington State University, including confinement raising and finishing and effects of plane of nutrition, were reported recently at the annual Washington Sheep Swine Day here.

Among the other topics under discussion on the program were quality in swine carcasses, breeding sheep for acceptable carcasses, the outlook for hogs and sheep and promotion and advertising.

Summaries of some of the reports on the program follow:

EFFECTS OF PLANE OF NUTRITION ON BODY CONFORMATION AND COMPOSITION—Results of experiments with pigs and sheep to find out whether it is possible to alter the conformation and composition of the animal by changing the plane of nutrition at different periods of the animal's life were reported by Sir John Hammond, University of Cambridge, Cambridge, England.

In an experiment with sheep killed at 16 weeks old, it was found that low plane of nutrition had inhibited growth in the later developing and more valuable loin than it had in the earlier developing head and legs. Thus the conformation of the low plane pigs was more like unimproved than the improved type.

In those slaughtered at 200 lb. live weight, those which were grown quickly on a high plane of nutrition when they were young lengthened out well and grew a large frame with bone and muscle and when later they were put on low plane nutrition, these continued to grow and but little fat was put on. In those that were grown slowly when young, bone and muscle growth were stunted and when they were put on high plane of nutrition at 16 weeks old, they put a lot of fat on a small frame and gave a lard hog type of pig.

Similar experiments were carried out with sheep to determine the best method of feeding to produce the best quality lamb of 300 lb. carcass weight. The best carcasses were provided from those which had been fed on high plane of nutrition all the time and were 56 days old at slaughter. In those that were put on high-plane at first and low-plane later and killed at 124 days old, the bony framework had been well developed, but the muscle and fat cover had not developed sufficiently to give good quality carcasses.

"The reason why h'gh-high plane of nutrition should give the best quality carcass in lambs and the high-low plane of nutrition in pigs is the main d.fficulty in finishing lambs at low weight to obtain sufficient fat cover whereas the main difficulty in providing a good pig carcass at 200 lb. liveweight is to prevent the putting on of too much fat," Mr. Hammond said.

FINISHING HOGS IN CONFINEMENT—"Hog production is undergoing a revolution with ideas unthought of just a few years ago now standing practice," said Tim D. Hoelle, manager, livestock chows, Pacific region, Ralston Purina Co.

These new practices and trends make the hog industry one of the fastest changing, most progressive and most interesting parts of our entire animal agriculture, he said.

Within the past few years, hog production in many instances has changed from a traditional part of almost every farm operation to a well organized, highly efficient operation that makes use of every possible idea and device to reduce labor and increase profits, Mr. Hoelle added.

This does not mean that hog raising is going to pass into the hands of just a few large raisers, he said. Actually, recent trends strengthen the position of large and small producers alike.

"It does, however, mean that the hog raiser of today and tomorrow is going to have to watch closely all new ideas and trends that might affect his production costs," Mr. Hoelle said.

"One significant and far reaching new trend is the finishing of market hogs in confinement," he said. "We in Purina characterize the practice as pig parlor feeding because the idea is to make things as conducive as possible for pigs to make hogs out of themselves. There can be all types and sizes of pig parlors as long as the emphasis is on good sound practical hog management, good breeding, careful sanitation and good feeding of pigs from weaning to market in a confined area. A good unit would be 50 pigs per pen with about 12 sq. ft. of space per hog, including adequate feeder and watering space and with the building adapted to the specific climate."

What has caused profit-minded hogmen to start and continue this trend to confined feeding of hogs? It seems only yesterday that good pasture was considered an essential for fattening hogs and indeed many experiments proved a very high economic value of pasture, he said. The truth is that in the past, pasture has concealed inadequacies of poor rations and hogs have performed very poorly without pasture. Swine nutritionists, however, have been working on improving rations and actually their success has paved the way for drylot feeding since pigs were not intended to be "hayburners." The basis of the trend to confined feeding is simply one of management re-evaluation. Today, pigs fed properly grow faster in confinement and pasture saves so little feed that it is either not profitable to produce or if already available as a part of the crop rotation, its alternate use for ruminants promises a much higher return, he added.

"Swine nutritionists from all research groups are contributing valuable information on today's well balanced hog rations," said Mr. Hoelle. "We have summarized some current work from various experiment stations on pasture vs. drylot feeding of hogs. In each case the rations used would be considered as modern and well balanced. The pasture was excellent. The pigs were divided in small groups so that adequate pasture would be available on pasture lots of ½ to 1 acre size. A total of 69 test comparisons were made with 1273 head of hogs involved."

In all of these tests, on the average the hogs gained 5.7% faster in drylot, he said. In other words, when

FIRST PLACE: *Le Mars Hatchery, Le Mars, Ia. Owner Albert Engbers (right) and Casey DeKoster, promotion man, are shown as they planned part of the many activities that brought the first place prize to their company. The addition of a new grinding and mixing unit, bulk truck, rearrangement of office and display room and a direct mail sales promotion program, gave this firm a 39% increase in feed tonnage, over 40% increase in chick sales and similar increases in remedy and equipment sales. (Inset: Portion of display unit devoted to Wayne Dog Food.)*

THESE HATCHERY AND FEED MERCHANDISING AND DISPLAY CONTEST WINNERS PROVE:

"Wayne and Customer Service

It's a simple and effective formula that works for these prize-winning Wayne Feed Dealers . . . customer service, quality products and sound sales promotion.

"Service" is something only the dealer can provide . . . but "Service" backed up by quality products and good sales techniques builds business. That's why these dealers rely on Wayne Feeds for both quality products and merchandising aids. They know that the years of research and testing that go into Wayne Feeds produce results in the feed lot . . . give them satisfied customers and repeat business.

And, more and more feed dealers every year are finding that Allied Mills goes "all-out" to help them merchandise top-quality Wayne Feeds in their areas. Local newspaper

Over 25 business building services, including: Sales Training Schools • Bulk Installation Guidance • "5M" Business-Management Counsel • Research Farm Tours • Concentrate Programs

Executive offices: Chicago, Ill.: Mills at: Guntersville, Alabama • Gainesville, Georgia • Peoria, Illinois • East St. Louis, Illinois • Fort Wayne, Indiana • Mason City, Iowa • Omaha, Nebraska • Buffalo, New York • Everson, Pennsylvania • Memphis, Tennessee • Fort Worth, Texas • Portsmouth, Virginia

the ration was adequate, pasture slowed the rate of gain.

Pasture saved, on the average, just 2.8% of the feed or 9 lb. of feed per 100 lb. gain. This would be about 16 lb. of feed per pig from weaning to market, or around 50¢ worth of feed. At 20 pigs per acre, the gross return for pasture would be something close to $10, assuming that the pasture isn't penalized for the time loss in slower pig gains. Certainly, pasture cannot be produced for that small return. If pasture is present as part of the crop rotation, then alternate uses for the pasture would offer a much higher dollar return, he said.

"The same type of results were obtained at our Purina Research Farm last year where we were testing different supplements in both drylot and on pasture," Mr. Hoelle said.

"I would be guilty of oversimplification if I told you this job of nutrition was easy," Mr. Hoelle pointed out. "It isn't. The science of nutrition is exacting. It encompasses the field of economics because the ration must not only contain all the essential nutrients but also supply them at the least possible cost. Rations and possible improvements must be continually tested in feeding trials as well as in the laboratory."

He listed some basic principles of feeding hogs that should be emphasized.

"(1) A well balanced ration for confined feeding is not only desirable —it is essential.

"(2) Plenty of fresh drinking water is essential for good nutrition.

"(3) Pigs require many nutrients; however, there are a few that must be considered fundamental in feeding swine in drylot—protein and protein quality, energy, calcium, phosphorus, salt, iron, copper, cobalt, manganese, zinc, vitamin A, riboflavin, pantothenic acid, niacin, B_{12}, vitamin D and unknown growth factors. In addition, medications such as antibiotics should be included in the ration. It is becoming more clear all the time, however, that the right level of any one nutrient is dependent upon the level of several other related nutrients in the ration as well as the gross efficiency value of the ration. In other words, the final answer is obtained from the pigs themselves as to which ration is best. Therefore, the proper feeding program is one that follows the results of pig research work.

"(4) Feeding ground mixed complete rations, if a top well balanced hog supplement is used, can increase pig gains and save enough feed to more than pay for the cost of grinding and mixing. I must, however, say that results of free choice feeding of grain and supplement versus grinding and mixing are directly related to the nutritional balance of the supplement and of the final mixed ration. Certainly from the negative point of view, the poorer the supplement the more essential that it be fed free choice with grain. I have no doubt that as swine rations improve in the future, that mixed complete rations will be even more highly recommended."

There is another change that has had a bearing on the trend to more confined feeding of hogs, he said. Pasture costs are higher today than they ever have been.There has been a three-fold increase in farm real estate values from 1940 to 1957 and we simply have to manage our farms in such a way as to get more and more out of our land and pasture rather than less and less, he cautioned.

"I believe the above discussion pretty well forms the basis for management re-evaluation of hog feeding practices," he said.

Management

Frankly, there can be either good or poor management connected with raising pigs on either pasture or confinement, he said. The "man" involved in "management" is the key in getting the job done. Let's mention a few points.

Mr. Hoelle pointed out that careful sanitation is a necessity in hog raising and particularly in confinement. Concentration of hogs makes a good sanitation program easier to practice and it also makes a good sanitation program more essential. It takes healthy hogs to make efficient use of well balanced rations.

Good litter management is important in confinement of hogs, he said. Labor is involved, of course, in hauling manure when hogs are raised in confinement. Straw, poor hay and/or ground corn cob are commonly used for bedding. Under most conditions, bedding would be used in the winter and not in the summer. Whenever sore feet are a problem in the summer, then bedding can be used for a period of time.

During hot summer weather a water sprinkler system in one corner of the pen is very profitable and effective in holding gains high and enabling pigs to utilize feed most efficiently, he noted. The sprinkler is especially important when the temperature gets above 80°F. Many experiments have shown the high economic value of the sprinkler and, of course, it is easy to arrange in a confined, hard surface feedlot.

"Grouping of equal size and age pigs together is an important management consideration in order to get the best feeding response," he emphasized. "We have summarized six years of our hog experimental records where the age differential of the pigs in any one pen was more than 2

(Turn to page 52)

Casey DeKoster stands by another display used by Le Mars Hatchery to keep current literature available for customers inspection. Small pieces of equipment are also used to make every display work toward increased sales.

TENTH PLACE: Wayne Feed Supply Co., Arthur, Illinois. Shown here is just one of the displays used by Wayne Feed Supply's Manager, Carter Odum, to help boost sales. A special Christmas Party, tours for school children and agricultural classes were other activities credited with building extra business.

FIFTH PLACE: Key's Hatchery, Delavan, Illinois. Owner Carl Key says, "You can continue to hold your customers and gain new ones if you prove to him that you are honestly interested in his problems by giving him the best possible service." This policy paid off in increased sales during 1959.

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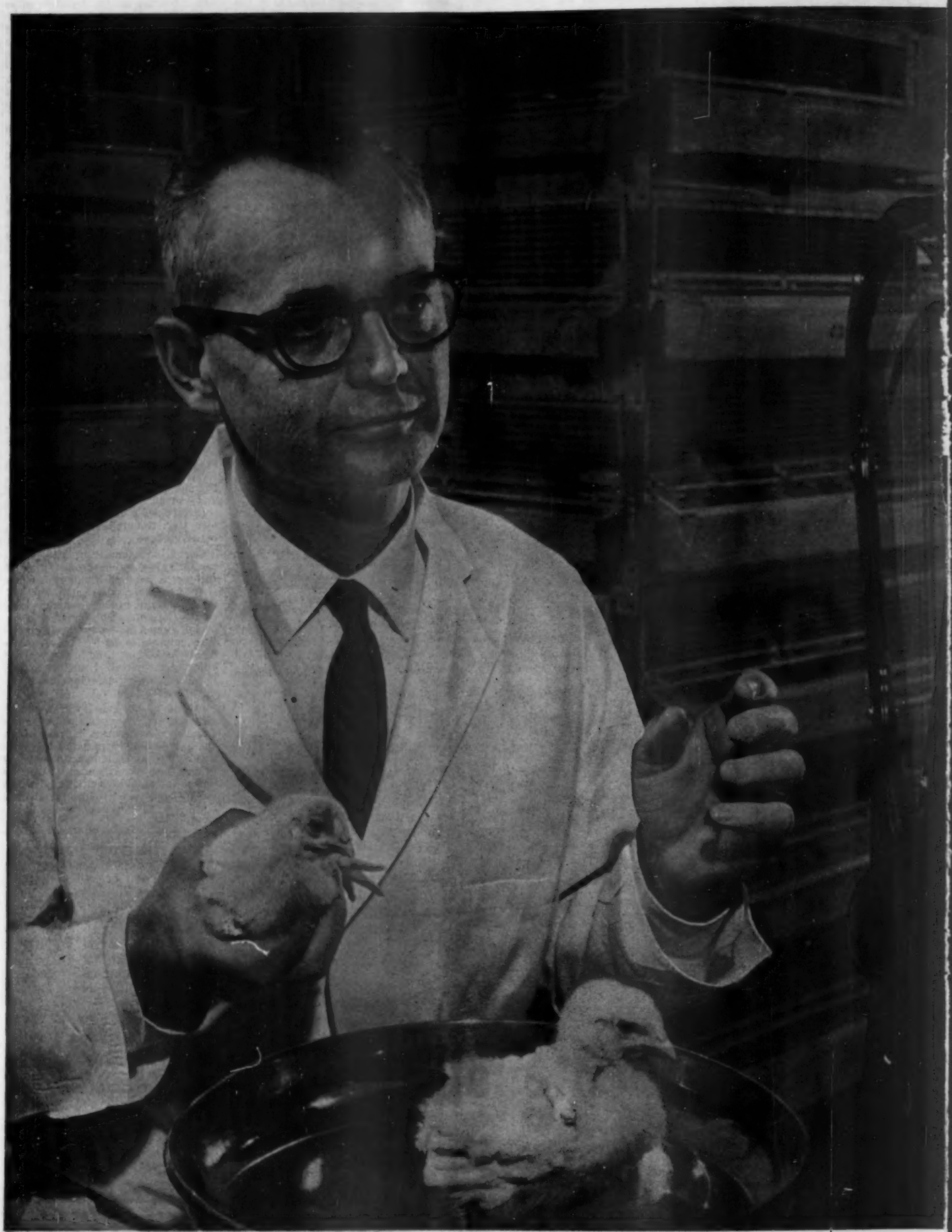

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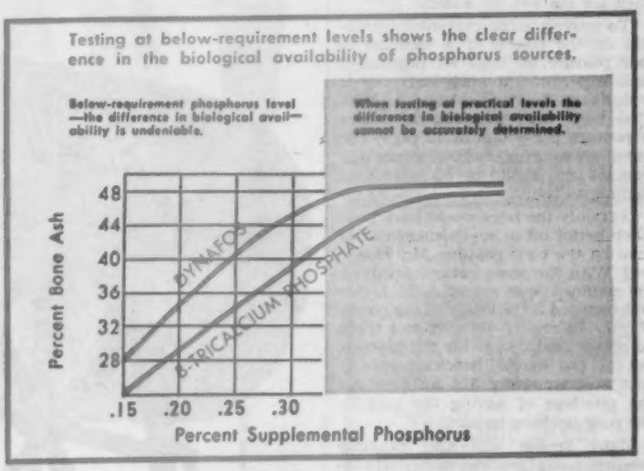

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weeks. Under these conditions the older pigs in the pen on the same ration and during the same period of growth averaged 6¼ lb. more gain than the younger pigs. It certainly is well worthwhile to partition the pen and feed the proper ration to the pigs in various weight and size groups commensurate with efficient use of feeders and waterers. The same principle has been just as important in the past with pigs on pasture; however, it has not been practiced to any great extent because of fencing costs in splitting large fields."

Actually, he said, there are many other factors that were not covered in this discussion. For instance, on the one litter a year system there usually are no existing facilities for drylot feeding since the program is basically conducive to pasture. On the other hand, multiple farrowing has speeded the trend to confined feeding since drylot facilities are needed when pasture is poor or not available. It certainly is true, he pointed out, that the value of good pasture is purely an academic discussion point in the middle of the winter with snow on the ground. There even is much question as to the effect of poor pasture for hogs, especially when a large field is involved. Mr. Hoelle recalled one experiment conducted a few years ago to give more information on the effect of exercise on hogs. The exercised pigs were driven 1 mile per day, which incidentally is equivalent to one trip around a 40-acre pasture field.

In this particular experiment, he said, the confined hogs gained 14% faster on 9.4% less feed than pigs that were driven 1 mile each day. Of course, whether the exercise a pig gets when walking by himself in a 40-acre field has the same effect or not is not known. However, the important thing is that exercise is not needed for the growing, fattening pig and by all means when pasture is poor, pigs should be confined and finished for market, he added.

"To provide some current information on the effects of a medium to poor pasture on hogs we duplicated some experimental work last year in drylot as well as on pasture," he said. "The hogs were provided five acres of pasture per group of 15 pigs. The pasture was a mixture of grass and legumes and would be considered as medium to poor."

Certainly the hogs would have been much better off in confinement rather than on the poor pasture, Mr. Hoelle said. With the same rations involved, the confined hogs gained 8.8% faster and required 3.7% less feed per pound of gain. In reality not only was there no economical return for the pasture, but at the normal stocking rate it cost approximately $14 an acre for the privilege of having the pigs on the poor pasture, he said.

Many people will also evaluate housing costs, fencing, water availability, mud, dust, etc., in connection with a re-evaluation of pasture versus confinement for growing finishing hogs, he added.

Summary

"Currently, there is a significant trend toward more hogs being finished under confined conditions," he noted. "The trend will continue in the future because of its economic advantages. Present research results show that ration improvements have been made so that pasture is no longer necessary for finishing hogs. In fact, hogs fed properly will grow faster in confinement. As a result, so little feed is saved by pasture that other uses for the pasture offer a much greater dollar return. The trend to confined finishing of hogs has been possible through improved swine nutrition over the past few years."

CONFINEMENT RAISING OF SHEEP—"Although the sheep industry tends to have been hidebound by traditional production methods, in recent years producers have been asking questions and experiment stations have been trying to find answers to those questions," said Joe B. Johnson, extension livestock specialist.

Many farm flock producers feel that the leadership in the sheep industry has too long been controlled by western range sheepmen who are no longer the economic factor they once were, Mr. Johnson added.

"Commercial sheep producers recognize that such selection criteria as setting of the ears, color of the nose and wool covering over the face and legs have no economic importance except in a reverse sense for wool face cover," he said. "Some producers and meat men are now questioning the broad, heavy chest in sheep required by present selection standards. A further question is the one of the great specialization in farm flock sheep production and the elevation of the farm sheep from the position of forage scavenger he now holds on many farms. Accordingly, the raising of sheep in confinement in volume is a problem to be considered."

A farm flock of 150 ewes has been under observation in Lunawee County, Michigan, by the extension livestock specialist from Michigan State University from 1953 through 1959. This set of ewes raised six crops of lambs with neither the ewes nor the lambs ever being turned to pasture. The farm involved contained 80 acres of tillable land with both the father and son employed off the farm.

The sheep program was based on the use of grass silage, corn silage, hay and farm-raised grains. Direct green chopping of feed was tried, but the operators changed over to feeding stored feed rather than chopping each day. The ewes and their lambs were fed for the entire year from approximately 35 acres of land. The land was good enough to normally yield 4 to 5 tons of hay or 80 bu. of corn per acre. The ewes were fed an average of 2 lb. of hay and 6 lb. of silage per head per day during the entire year.

About two weeks before breeding and for about four weeks during the breeding season, the ewes were fed an average of ½ lb. farm-raised grain per day. They were fed ¾ lb. grain per ewe per day 6 weeks before lambing. These ewes, of course, were fed some grain following lambing, but once the lambs started to eat from the creep it was not necessary to feed the ewes quite so much grain.

Creep feeding of the lambs was started about two weeks after birth using a ration of corn, bran, soybean oil, meal and dried molasses, with ½ lb. of Auropep added per 100 lb. of creep mix. The operators added the Auropep because they felt it helped control overeating disease. Some of the lambs were sold directly from the ewes. The remainder were weaned at about 4 months of age and continued on grain feeding until marketed.

"These folks raised between 110 and 125% lamb crop and experienced no unusual problems because of having the sheep confined to the dry lot," Mr. Johnson said. "They used the normal worming plan and felt that the

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internal parasite problem was almost eliminated in the young lambs."

The barn used in this program was 60 by 70 ft., giving about 28 sq. ft. of floor space per ewe. "We do not know if this is the correct figure to use or not, since this is the only trial of this type we have been able to find," he said.

The yards were 70 by 1500 ft. and sloped sharply to the south. Neither the barn area nor the yard was surfaced. However, since the yard area sloped quite abruptly, there was no particular trouble with muddy lots, he added. Both the ewes and lambs were confined throughout the year. In fact, the ewes were in confinement for six years and still were in very good condition when sold. The operators had no cost data on this flock but doubted, with the exception of labor, if the cost was any greater than the so-called conventional way.

Depending upon the year and prices received, the lower producing ewes in the flock returned from $19 to $22 per ewe. The high producing ewes returned from $32 to $34 per ewe. An advantage to this confinement system was the fact that there was no predator problem. The ewe flock was sheared before lambing with the lambs to come in February.

The success for this program, Mr. Johnson said, depended upon a number of factors:

"(1) The operators gave very careful attention to the proper management and feeding of the flock.

"(2) The very best mutton-type rams available were used in order to have a high quality lamb to sell.

"(3) Early lambing for the Michigan area was followed.

"(4) Creep feeding of the lambs was practiced.

"(5) The lambs were marketed in early summer to take advantage of the best possible prices."

An alternative to the program which many producers feel to be more desirable is to lamb in January or possibly earlier, creep feed the lambs, wean those lambs which are not fat all at the same time and turn the ewes out on mediocre pasture, he said. With this system, people can make use of less desirable tillable land and untillable land and reduce daily chores during the summer. The flock size can be almost doubled since the ewes require less favorable pasture if they are not nursing a lamb. This alternative program has the one disadvantage of requiring fencing and equipment which is not required under the complete confinement plan, he noted.

Other Experiences

At the USDA Research Farms at Beltsville, Md., lambs have been weaned off at 4 weeks of age and put in dry lots for "pushing" to market weight, Mr. Johnson said. Another group of lambs was kept in the barn all the time except when they were allowed to nurse night and morning.

"Both of these practices were successful," he said. "Creep feed was before the lambs. Parasite control was efficient and continuous growth was accomplished. The University of Minnesota also had good results by weaning lambs off at 4 weeks of age."

For 3 years, a 57-acre farm in North Carolina has been supporting 200 head of breeding ewes, said Mr. Johnson. The operator weans his lambs at 90 days and finishes them out in the barn on dry feeds. While nursing their lambs, the ewes run on temporary pasture consisting of millet during the summer and rye grass and crimson clover in the winter. The ewes not nursing lambs are run on permanent pastures which are mainly ladino clover and orchard grass. The ewes are wintered on corn silage which is mounded above the ground in stacks covered with plastic.

"The operator devotes all his time to the care and management of his sheep," Mr. Johnson said. "He finds that he can feed out some additional lambs in addition to those produced by his own ewes. His lambing percentage has run from 120 to 150%. He collects manure samples each month during the summer and has them checked by his local veterinarian."

"His parasite control program is planned according to the finding of these samples and he uses phenothiazine and bluestone in rotation. The success of this operation depends upon the attention the operator gives to small details in care and management of the sheep. He feels that this program is a good answer to the problem he had of the lambs not growing out on pasture during the hot summer months."

In an effort to cheapen wintering rations for ewes in confinement, Mr. Johnson said, the University of Wisconsin has tried four rations:

(1) Pelleted alfalfa hay alone,

(2) Pelleted alfalfa hay with 10% salt,

(3) Pelleted corncobs 84% plus alfalfa meal and soybean oilmeal and

(4) Pelleted 84% straw plus the alfalfa meal and soybean oilmeal.

"All of these rations were successful in carrying the ewes up to lambing," Mr. Johnson said. "But upon continuing the ewes on the same rations during lactation, it was found that the pelleted hay was the most

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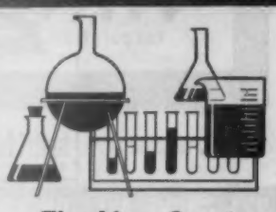

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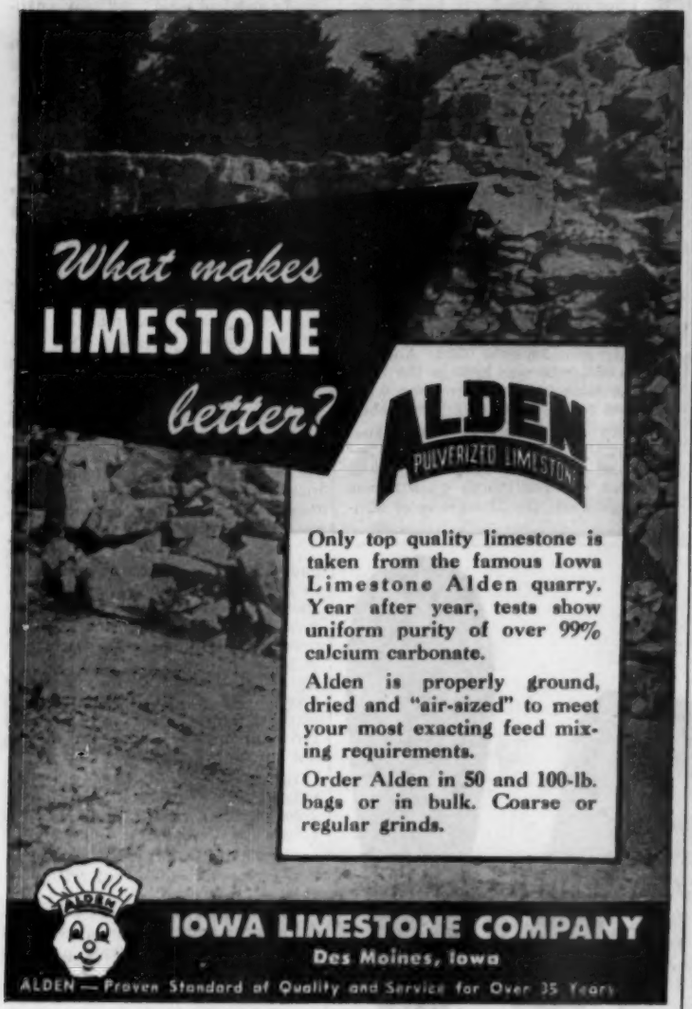
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EXAMINE CARCASS DISPLAY—Examining a pork carcass display at the Washington State University Sheep-Swine Day are (left to right): Scott Barr, president, Washington Swine Producers, Inc., Edwall, Washington; James C. Nofziger, swine specialist, Washington State University; Sir John Hammond, Cambridge, England, and Robert Wolf, president, Washington Swine Breeders Assn., Tekoa, Wash.

successful. The ewes could not give sufficient milk on rations 3 and 4."

It was further found, he said, that creep feeding pellets to lambs straight through to marketing without grass had many advantages. These lambs were born in February and then weaned from the ewe when the grass was ready in the spring for the ewe. The lambs were 2½ to 3 months of age at that time.

Another economy ration for maintaining ewes has been developed by the University of Illinois, Mr. Johnson noted. This is composed of: 60% ground corncobs, 24% cracked corn, 6.8% ground alfalfa meal, 7.3% soybean oilmeal and 1.9% minerals.

This ration is self fed and non-pregnant ewes have maintained their body weight and bloom surprisingly well, he said.

Pelleted Creep Ration

A pelleted lamb creep ration which has given excellent results, Mr. Johnson said, has consisted of: 40 lb. of high quality alfalfa hay, 10 lb. soybean oilmeal, 20 lb. shelled corn, 8 lb. molasses, 20 lb. barley or oats, 1 lb. trace mineralized salt and 1 lb. steamed bonemeal or dicalcium phosphate.

To this add a vitamin premix containing approximately the following per ton: 5 million units vitamin A, 625,000 units vitamin D and 10,000 units alpha or mixed tocopherols (vitamin E). Antibiotics (Aureomycin or Terramycin) 50 grams per ton. This should protect against pneumonia, scours and overeating disease.

Summary

A number of sheep raising programs have been proposed. These have ranged from complete confinement during the entire lifetime of the ewe and lambs to a number of alternative plans from this proposal. It is hoped that sheep producers will get some ideas from these programs which might help them increase net returns from sheep production, he said.

"Some of the advantages of a complete confinement program are a lessened requirement for fencing and equipment for sheep, greater control of internal parasites, no loss from dogs or other predators, and better control of the breeding and marketing seasons," he said. "These advantages have in turn increased gross returns per acre of land used by the operator."

"The main disadvantages to a confinement program are the greater need for attention to care and management of the sheep with a corresponding greater labor requirement."

A greater use of corn and corn by-products for sheep producers in the Columbia Basin is proposed, he said.

QUALITY IN SWINE CARCASSES—"Our goal is to be able to pick the carcasses that have high quality pork and to reject those that have poor quality pork," said Eugene H. Rupnow, Washington State University.

"We use firmness, overflow of fat in the rib cage and back fat thickness as indicators of good quality pork," he said. "However, these are not accurate in predicting the tenderness, juiciness and flavor of pork from an individual carcass."

Research work with hogs has also included evaluation of the meat, he noted. Reported results have shown that not all pork is tender. U.S. Department of Agriculture workers reported a correlation of 0.82 between marbling score of the loin and the tenderness of the pork. They felt that

(Turn to RESEARCH, page 81)

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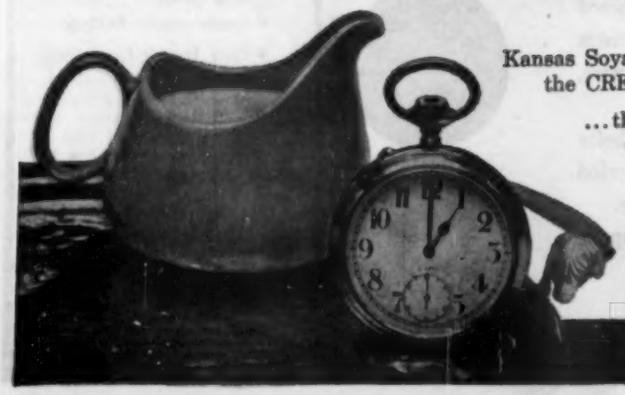

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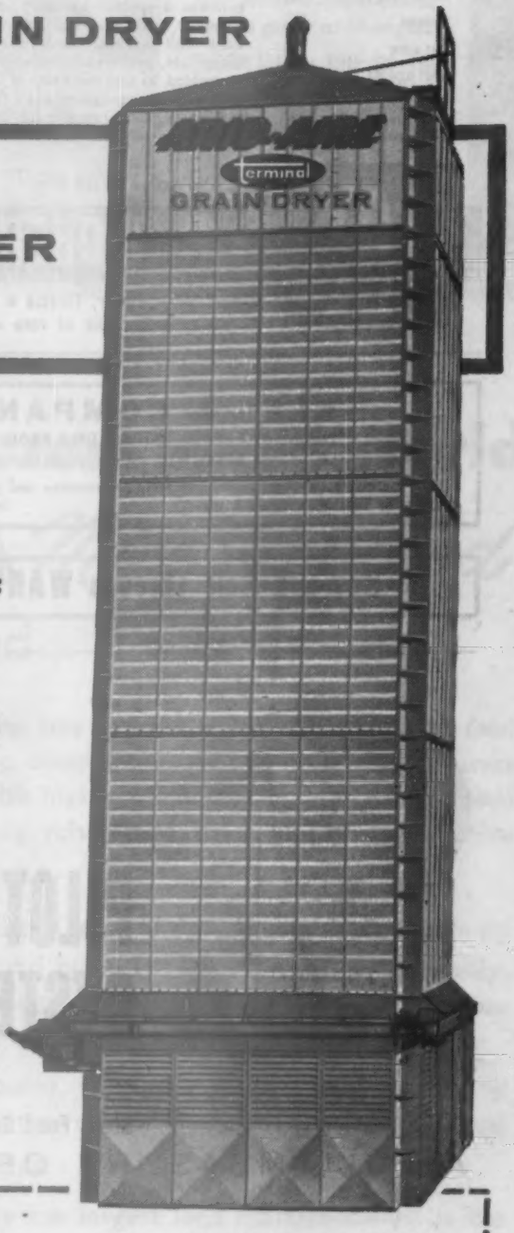

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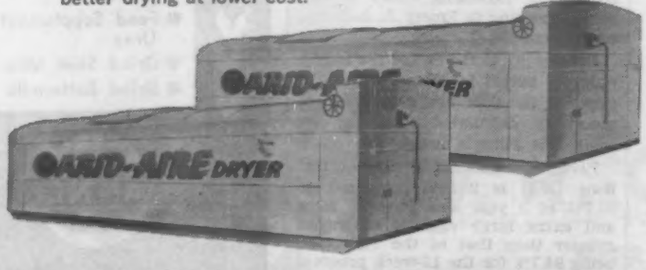

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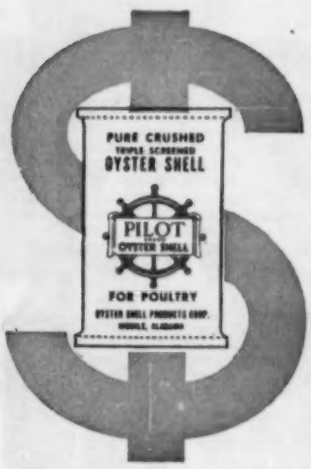

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TABLE 1. Comparative Costs of Total Protein in Soybeans and Soybean Oil Meal

—Soybeans (38% total protein)— Price/bu.	Price/cwt.*	Price/lb. of protein	Soybean meal—Price per pound or protein in 45% protein meal Price/cwt.	in 45% protein meal	in 50% protein meal
$1.50	$2.60	$0.068	$3.00	$0.066	$0.060
1.60	2.77	.073	3.10	.069	.062
1.70	2.93	.077	3.20	.071	.064
1.80	3.10	.082	3.30	.073	.066
1.90	3.27	.086	3.40	.076	.068
2.00	3.43	.090	3.50	.077	.070
2.10	3.60	.095	3.60	.080	.072
2.20	3.77	.099	3.70	.082	.074
2.30	3.93	.102	3.80	.084	.076
2.40	4.10	.107	3.90	.087	.078
2.50	4.27	.112	4.00	.089	.080
2.60	4.43	.116	4.10	.091	.082
2.70	4.60	.121	4.20	.093	.084
2.80	4.77	.126	4.30	.096	.086
2.90	4.93	.130	4.40	.098	.088
3.00	5.10	.134	4.50	.100	.090

*Includes grinding charge of 10c cwt.

Ground Soybeans Fed in Dairy Tests

URBANA, ILL.—According to research conducted at the University of Illinois, ground soybeans can be used in dairy rations to provide the crude protein that is needed in the grain mixture to supplement the different kinds and qualities of roughages fed.

"Whether soybeans should be fed in preference to soybean oil meal or other protein supplements depends on the relative economy of the two," said Dr. K. A. Kendall, department of dairy husbandry, in a recent report. "Compared with soybean oil meal, ground soybeans are usually not economical to use."

Table 1 shows the cost per pound of protein in soybeans and soybean oil meal at various market prices. Occasionally, damaged soybeans are subject to a severe dock in price.

"If the beans are low in price as a result of a severe dock, it may be economical to feed them," explained Dr. Kendall. "But if they contain an excessive amount of weed seeds, some of the seeds may pass through the animal undigested and be spread on the land via the manure."

On the average, soybean seed contains 18% oil, 38% protein and 88% total digestible nutrients. Commercial grades of soybean oil meal contain as low as 1% oil, 45-50% total protein and 79-80% total digestible nutrients.

Butterfat Content

Research has shown that feeding ground soybeans to cows will increase the butterfat content of their milk slightly. However, in these tests, the maximum increase was 0.25%, which is not enough to cover the additional cost of feeding soybeans. The feeding of large amounts of ground soybeans lowers the melting point of the butterfat, and soft butter is obtained when such cream is churned.

When soybeans are ground and mixed with grain, the soybean oil is exposed to the air. Such exposure causes the oil to become rancid and gives the feed a disagreeable odor and flavor. The length of time such a mixture can be stored depends primarily upon the temperature. In hot weather, feed may have to be ground every third day. At below freezing temperatures, the feed can be stored for several weeks.

Ground soybeans should not be added to concentrate mixtures that contain urea, because raw soybeans contain an enzyme, urease, that acts upon urea and causes ammonia to be released, Dr. Kendall said. This ammonia makes the feed unpalatable, and part of the feeding value of the urea is lost.

Soybeans provide about 10% more total digestible nutrients than shelled corn. If cobs are included, the TDN value of 120 lb. of corn and cob meal is equal to that of 100 lb. of ground soybeans. Thus, as a source of digestible energy, soybeans can compete with corn and cob meal only when they are available at about (within 4%) the same price per bushel as corn. Actually, for ruminants a bushel of soybeans contains 4% more TDN than a bushel of ground ear corn.

Rate of Lay Rises in 11th California Test

MODESTO, CAL.—Floor birds of the 11th California Official Random Sample Egg Laying Test at Modesto for the period 56-67 weeks of age laid eggs at the rate of 69% and cage birds 61%, exceeding that of last year, according to Emery A. Johnson, superintendent.

Rate of lay to the end of the fourth progress period is 227 eggs and 213 eggs for the floor and cage hens respectively, calculated on a hen/day basis, Mr. Johnson notes.

Livability among the current test floor birds is 95.5%, compared to 91.7% of a year ago. Percent large and extra large eggs is somewhat greater than that of the 10th test, being 94.7% for the 12-week progress period.

The current 11th test comes to a close in September. Persons interested in receiving the full final report can have their names added to the mailing list by writing to the California Poultry Improvement Commission, Route 3, Box 1145, Modesto.

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Quality, Feeding Value of Hay Depend Upon How It's Made

By Dr. M. E. Ensminger
Washington State University, Pullman

Hay is the most important harvested roughage for U.S. livestock and ranks third among all livestock feeds —being exceeded only by pasture and corn. It comprises 60-80% of the total nutrients consumed by ruminant animals (mostly cattle and sheep); and forage nutrients are generally lower in price than those furnished by concentrate feeds.

The importance of the nation's hay crop is further attested by the fact that the average total acreage of hay is nearly 75 million, and the annual production more than 100 million tons. Despite the importance of hay, no other crop is accorded such neglect; and this usually begins with cutting too late. Moreover, no other crop suffers a higher loss of nutrients from the time it is harvested to the time it reaches the manger—losses that vary all the way from about 10% under near-ideal conditions to more than 40% under all too common unfavorable conditions of weather, or inadequate machinery, labor or storage. One study made by the University of Wisconsin revealed that, of hundreds of hay samples tested, only 5% graded excellent, 25% good, 45% fair and 25% were poor.

Visual Estimates

Visual estimates of hay quality are of value, but often they are unreliable; it's like predicting the eating qualities of meat by inspecting animals on foot. Thus, federal grades of hay lack in accuracy, even when made by experts. A Pennsylvania study revealed errors of as much as 5% in crude protein and 9% in TDN content of a forage, made by trained individuals.

Fortunately, research has shown a high relationship between the chemical composition—especially the protein and fiber—of hay and its feeding value for animals. As a result, a growing number of states now have laboratories where, at a nominal charge, a quick check of moisture, protein and/or crude fiber (the latter consists of the woody portions of the plant that are not easily digested) can be made.

As hay matures, protein decreases (pounds of protein per acre decreased from 935 lb. in early cut hay to 605 lb. in late cut hay, according to a Cornell University study) and fiber increases. Likewise, weathering lowers the protein and raises the fiber content since soluble nutrients are washed out by rain and leaves are lost during harvest.

It is also noteworthy that palatability seems to be negatively correlated with crude fiber levels: The higher the fiber content the lower the palatability. This is important, for if cattle won't eat it, they can't produce. Cornell's investigators found that cows ate 2 lb. more of the early-cut hay per day than of late-cut hay.

WHAT THE TEST RESULTS MEAN—A farmer may want to compare the analysis of his hay on a moisture-free basis with the figures given in Table 1 for different kinds of forages. In doing so, he should bear in mind that some state testing laboratories advocate a determination of moisture and of either crude protein or crude fiber, but not both. In any event, from the analysis made one can predict the total digestible nutrients and digestible protein, if desired.

As noted, legumes usually contain more protein than grasses, even when both are cut at similar stages of maturity. With a grass-legume mixture, one can estimate the proportions of grasses and legumes and calculate the composition from the figures given in Table 1.

TABLE 1. Approximate Chemical Composition (Moisture-Free) of Various Sun-Cured Hays

Kind of Hay	Crude Protein (%) Average	Crude Protein (%) Range	Crude Fiber (%) Average	Crude Fiber (%) Range
Alfalfa	15.5	12.0-19.0	29.0	22.0-36.0
Bromegrass	10.5	6.0-15.0	28.0	24.0-31.0
Ladino clover	18.5	16.0-21.5	22.0	18.5-23.0
Red clover	12.0	10.5-18.5	27.0	18.0-34.0
Lespedeza	13.0	11.5-14.5	27.0	22.5-32.5
Oat hay	8.0	4.0- 6.0	28.0	26.0-32.0
Orchard grass	8.1	6.0-14.0	30.0	26.0-31.0
Soybean	14.5	9.0-16.5	28.0	20.5-41.0
Timothy	6.5	5.5- 9.5	30.0	28.0-31.5
Sudangrass	8.8	6.5-11.0	28.0	26.0-30.5

EDITOR'S NOTE: As the author notes, hay is an important livestock feed—so feed men may find considerable value in this article as additional background information for servicing producers. Dr. Ensminger's discussion, which brings up to date the many factors affecting hay quality, is quoted from his "The Stockman's Guide." The author is head of the department of animal science at Washington State University.

The maximum moisture content (much lower content is preferable) for safe hay storage is as follows:

For loose hay—25-28% moisture.

For baled hay—up to 22-25% moisture (the lower figure for large bales).

For chopped hay—18-22% moisture.

Hay of higher moisture content than this should not be stored, and besides, water is abundant in most places and should not be purchased at hay prices.

If the producer's chemically analyzed sample runs higher in protein and lower in fiber than the average figures given in Table 1, he has better than average quality hay. Conversely, if it is lower in protein and higher in fiber, his hay is below average in quality.

Of course, stockmen should not settle for average protein or fiber content for, on the whole, the vast majority of the U.S. hay crop is of low quality. For this reason, one should strive for the upper figures of the range given in Table 1.

Certainly, poor quality hay can be fed and, under certain circumstances, it may even be economical and quite satisfactory—for example, for mature beef breeding cattle or fattening steers. However, when buying poor hay, the purchase price should be lowered accordingly; and the feed analysis should also be used as a basis of balancing the ration.

By the same token, it is usually

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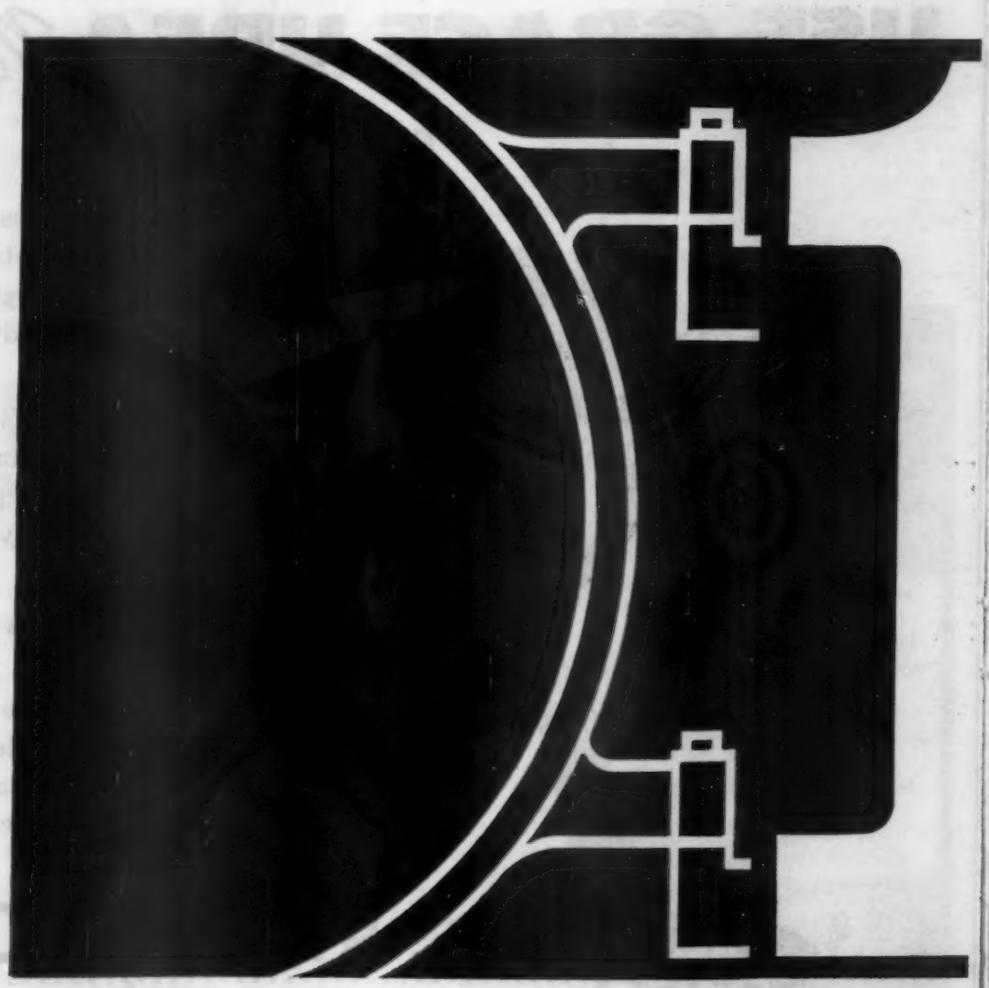

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TABLE 2. Estimated TDN and Digestible Protein and Dollar Value of Five Lots of Sonoma County, California, Hay

Lot of Hay	Chem. Analysis D.M.	Chem. Analysis C.P.	—Estimated— TDN	—Estimated— DP	Estimated Value Net Energy & Protein	Estimated Value Net Energy Only	Original Cost	Hay Selling Price as Compared to Net Energy Value. Selling for— More than Value	Hay Selling Price as Compared to Net Energy Value. Selling for— Less than Value
1	92	28.2	51	13.1	$29	$25	$30	$5.00	
2	91.1	23.2	54.5	15.8	33	29	25		$4.00
3	91.4	26.6	50.5	12.8	29	26	29	3.00	
4	88.3	19.2	55	16.7	34	30	26		4.00
5	89.9	22.1	54	15.7	32	29	29	Just right	

good business to pay a premium for high quality hay. Some stockmen are very wisely applying an escalator principle to hay purchases. They may pay $1@1.50 ton premium for each 1% of protein above an agreed upon figure; or they may dock the price by a corresponding amount if the content is lower.

For example, if a vendor guarantees to deliver alfalfa with 15% crude protein and it is agreed that $1 ton premium will be paid for each 1% protein in excess of this figure, a $3 ton premium would be added for alfalfa running 18% crude protein.

Moisture Basis

In some cases, hay is also purchased on the basis of moisture content; and the price drops as this moisture content increases, thereby discouraging selling water. Others use crude fiber in the same manner—paying a premium for hay of low fiber content. Still others apply more complicated formulae to arrive at the dollar value of hay.

University of California workers (Meyer and Lofgren) have developed extensive tables based on two analyses only, dry matter and crude fiber: (1) To predict TDN and digestible protein and (2) to calculate the dollar value of hay on (a) a net energy plus protein value and (b) a net energy value alone.

Table 2 shows the results of applying this method of evaluation to five lots of hay in Sonoma County, Cal. As noted in the right hand column, based on net energy value, two of the lots of hay were a good buy, two a poor buy, while the fifth lot sold about right.

Purchase of hay on a quality basis, whatever the system, serves as a wonderful incentive to the grower to produce superior quality hay and, too, the buyer knows what he is getting.

Chemical Test

A chemical test provides informed appraisal of hay values. Except for actual feeding trials, it is the most infallible method of evaluating hay quality. By the use of mathematical formulae, it is possible to calculate the estimated digestibility and TDN (or digestibile energy) value of hay from its content of protein and crude fiber. With this information at hand, stockmen can (1) do a better job of feeding their livestock and realize higher profits and (2) determine the monetary value of a given lot of hay in relation to other lots. Supply and demand will still regulate price, however. In the end, hay will be up-graded; it will be cut at an earlier stage of maturity and put up with greater care.

TABLE 3. Effect of Maturation on Hay Quality

(Alfalfa data from the Nebraska Station; Timothy data from the Missouri Station)

Kind of Hay	Crude Protein (%)	Crude Fiber (%)
Alfalfa:		
Prebloom	22.0	25
One-tenth bloom	19.2	27
One-half bloom	15.6	28
Seed stage	14.1	37
Timothy:		
Heading	8.0	31
Full bloom	5.9	34
Seed ripe	5.2	31

CORRECT SAMPLING NECESSARY — The most important single step in determining the chemical composition of a lot of hay is sampling. No matter how accurate the chemical analysis may be, poor sampling technique can easily invalidate the results and lead to an erroneous conclusion.

CUTTING DATE IMPORTANT— The cutting date ranks at the top as an influence on composition; the more immature the plant at harvesting, the higher the quality of the hay. This is primarily due to the proportion of leaf to stem.

Macdonald College of Quebec, Canada, found a 33% increase in the coarse stems of red clover and a corresponding decline in the proportion of fine leafy material in a period of 11 days from the time the heads were forming to the early bloom stage.

Most grasses, clovers and alfalfa should be cut at the early bloom stage (alfalfa is best at 1/10 bloom). Cereals should be cut somewhat later —at the soft dough stage, soybeans when the beans are about one half grown, and cowpeas when the first pods mature. Table 3 shows the changes in chemical constituents of alfalfa (a legume) and timothy (a grass) as affected by maturation.

Like crude protein, many of the other desirable quality factors—including carotene (precursor of Vitamin A) and the B vitamins—decrease as plants mature. Vitamin D content is the one exception—it increases as the forage is sun-cured.

As proof that alfalfa hay becomes progressively lower in feed value as it gets older, the U.S. Department of Agriculture found that a given acreage of alfalfa cut in early bloom produced 404 lb. butterfat; when cut at the half-bloom stage, 345 lb., and when cut in full bloom, only 331 lb. of butterfat. To be sure, the tonnage yield of hay generally is greater with the advancing maturity of the crop, but the decline in quality more than offsets the increase in yield.

Sometimes the hay crop is permitted to become too mature because the grower is hoping for better weather. At other times, harvesting is deliberately delayed in order to obtain a higher tonnage per acre; cognizant that altogether too few buyers will lower the price appreciably if, indeed, at all. Most frequently, it can be attributed to neglect, for most of the hay consumed by livestock is grown on the farm where it is fed, with the result that the hay grower takes the loss.

FEED MILL SOLD

LANCASTER, WIS. — Lancaster Feed Mill has been sold to Leonell Jones, Stitzer businessman, by Kenneth Gausman, who owned and operated the mill for nine years. Mr. Gausman is now in charge of the southern Wisconsin area for the Geerling Feed Mills, Waterloo, Iowa.

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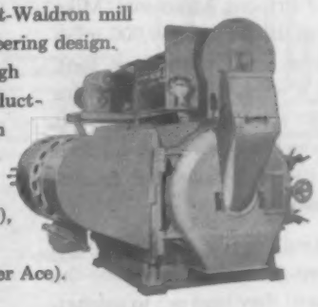

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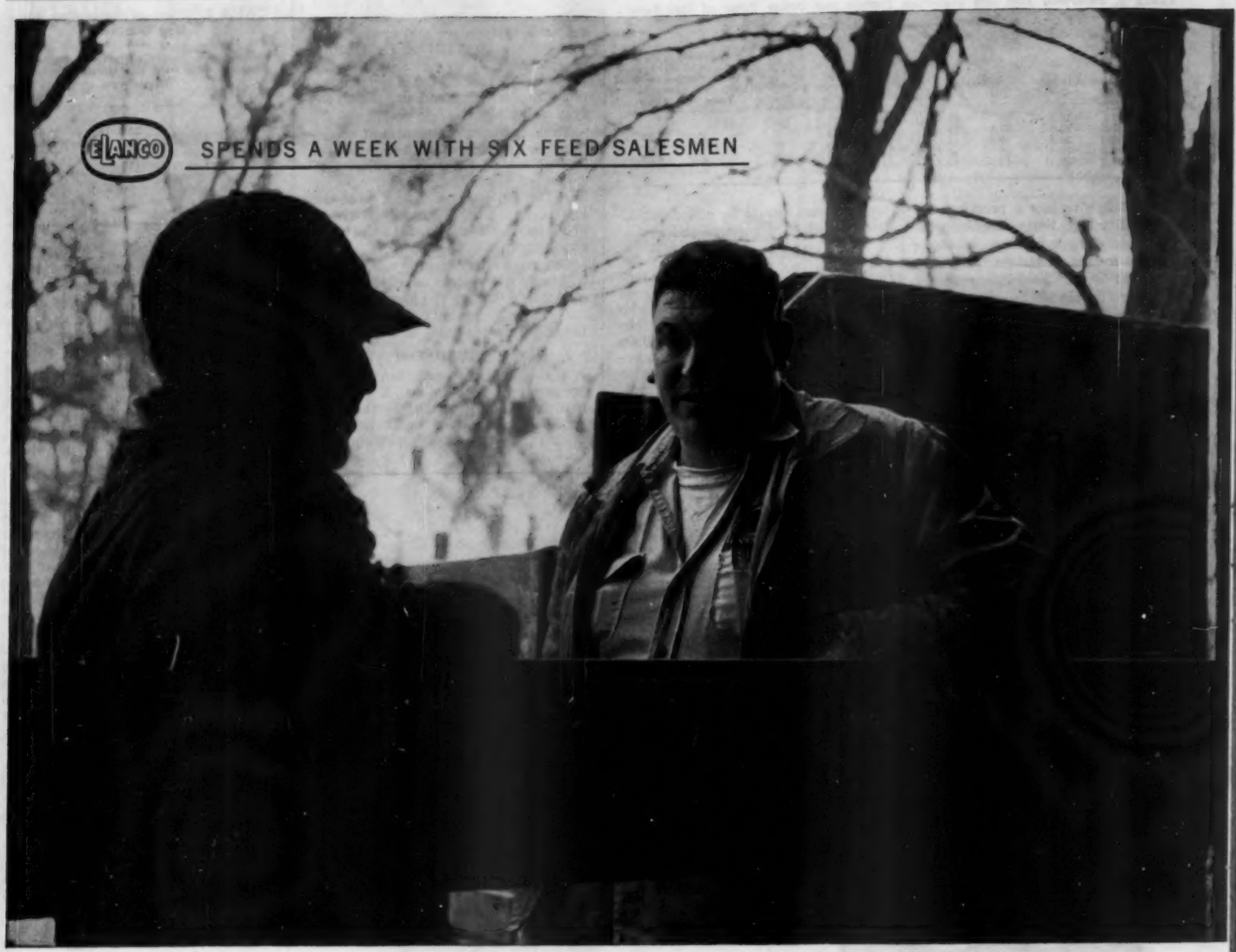

"Stilbosol makes the feed dollar do more"

"I figure for every dollar my customers put in, they get $10 to $14 back"

That's big "Mike" Bjorklund talking, a familiar sight to farmers around Fairmont, Minnesota. Mike is a feed service man and drives some 50,000 miles a year. He works 11 hours a day (Saturdays, too), and calls on 72 feeders a week. In addition to his normal sales duties, Mike also gathers feeder result stories for a television show sponsored by his feed company. So when it comes to facts and figures, Mike speaks with authority.

"My feeders like Stilbosol," Mike reported, "because it gives them cheap gains. From the time the cattle are in the yards until they load out to market, the average daily gain runs around 2.4 to 2.5 lbs.—this includes *both* steers and heifers. For greater gains on less feed, you just can't beat feeds with Stilbosol."

Mike was the first feed salesman we visited. His everyday activities combined with those of the other five salesmen made some interesting statistics:

- They drive over 250,000 miles per year.
- They call on 309 cattle feeders every week (over 15,000 a year).
- 76% of the cattle in their territories are Stilbosol-fed.
- Average daily gain of these cattle:
  steers—2.63 lbs. heifers—2.36 lbs.

Now, let's meet the others . . .

Gale Moore sells feed for a small mill in western Iowa. "We usually talk college figures," Gale explained, "because we don't conduct our own experiments. Because our feeders have to make a profit, we know Stilbosol is doing a job. One customer of ours recently took his first bunch of cattle clear through on our feed with Stilbosol. From Omaha payweight back to Omaha payweight, his cattle gained better than 3 lbs. a day, the first time his cattle have gained this fast."

Clarence Campbell covers southeastern South Dakota, and has been a feed salesman for 17 years. "I like to sell our feeds with Stilbosol," explains Clarence. "It helps feeders get more gain, and at the same time lowers their feed costs. My feeders report ¼ to ½ lb. more daily gain over cattle not fed Stilbosol."

We found Milford "Sag" Sagness in his company's booth at the annual Sioux Empire Farm Show. "Sag" travels the east central part of South Dakota and is a Vo-Ag graduate from South Dakota State. "Stilbosol is one of the major developments in cattle feeding that have helped feeders get maximum gain and maximum income for dollar invested," declared Sag. "Feeds containing Stilbosol are a 1960 ration. If you don't feed it . . . it's like comparing a 1960 ration with a 1940 ration. Feeders who accept these new developments are the ones who will stay in business."

Elton Rutledge is Cattle Feed Department Manager for a large mill in Missouri. His sales duties take him to Iowa, Kansas, Oklahoma, Nebraska, South Dakota, Wyoming, Colorado, and Missouri. "Our company was one of the first to apply for Stilbosol in our feeds," Elton volunteered. "We first fed it to our cattle on our research farm before it was released for public use. We still feed it. It gives us more gain and better feed conversion. As a matter of fact, we can't afford not to feed Stilbosol." Elton visits his company's well-equipped laboratory several times monthly to check on protein content of his feeds as well as competitors' feeds, and to analyze customers' silage for protein and Vitamin A.

Case Dykstra hails from Sioux City, Iowa. Here, you see him at the stockyards. "I don't get down here as often as I should," Case said, "but I like to talk to feeders and get the feeling of the market. And I know that with our feeds containing Stilbosol, feeders can expect 15% better feed efficiency on 10% less feed. If our company was not convinced of this, we wouldn't have Stilbosol in our feeds. We have our own experimental farm, and our feeding tests prove what I've just said. For every dollar invested, I feel that our customers get $10 to $12 in return."

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Corn-and-Cob Meal Yields Lean Hogs At Low Cost in USDA's Experiments

WASHINGTON — Pigs fed experimentally on corn-and-cob meal made of the whole ear produced a higher percentage of lean cuts at a lower feed cost per pound of gain than pigs fed a normal corn ration, U.S. Department of Agriculture scientists report.

These preliminary results are part of a long-term study of animal nutrition and breeding by USDA's Agricultural Research Service. The work is designed to develop feeds and types of hogs that will produce the lean pork desired by housewives. The nutrition studies are being conducted by Dr. Jacob A. Hoefer of the Michigan Agricultural Experiment Station under contract with USDA.

In these experiments, Dr. Hoefer fed 42 weanling pigs a high-energy diet, rich in total digestible nutrients, until they reached a weight of about 125 lb. He then shifted to high-fiber, low-energy rations as a possible means of producing lean pork more economically.

Five different high-fiber, low-energy rations — corn-and-cob meal, barley, oats, wheat bran or alfalfa—were fed to five groups of pigs. A sixth group remained on the high-energy diet for comparison purposes. All fiber-containing rations were essentially equal in protein, total digestible nutrients and fiber content. Pigs were slaughtered when they reached approximately 210 lb.

Pigs on corn-and-cob meal gained 1.29 lb. daily and consumed an average of 4.3 lb. of feed per pound of gain—a feed cost of $10.15 per 100 lb. of gain. Their carcasses yielded more than 54% of lean cuts.

Animals fed barley did well also, but yielded only 52½% of lean cuts. The fastest-gaining pigs were the control animals on the high-energy diet, but their feed cost averaged $10.52 per hundred lb. of gain and their yield of lean cuts averaged only 51%.

Although research so far indicates that corn-and-cob meal has promise as an economical and useful source of fiber for hog feed, Dr. Hoefer points out that further research is needed to judge its long-term effectiveness.

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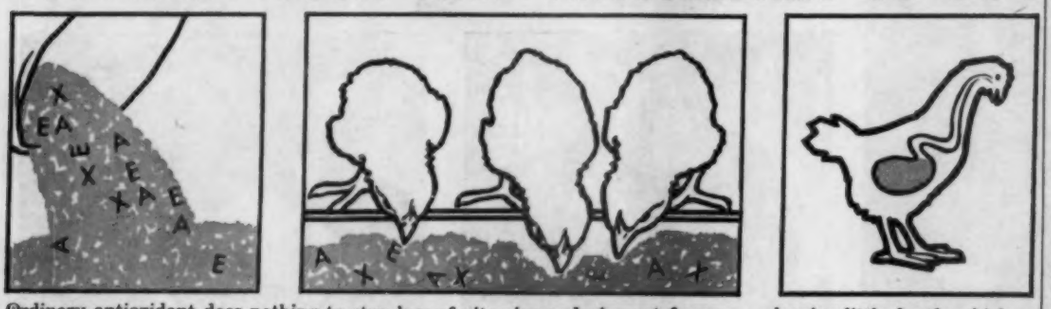

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Protects vitamin A through digestion and metabolism	No	Yes
Preserves carotenes	No	Yes
Improves pigmentation by guarding xanthophylls	No	Yes
Acts in the bird like vitamin E to prevent diseases	No	Yes

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Associate Professor Appointed at Clemson

SPARTANBURG, S.C. — Appointment of Dr. F. W. Boebel as poultryman and associate professor of poultry has been announced by Dr. B. D. Barnett, head of the Clemson College poultry department.

Dr. Boebel will conduct disease research and teach courses in poultry pathology.

Dr. Boebel received his B.A. degree with a major in chemistry at North Central College, Naperville, Ill., in 1942, the D.V.M. degree from Kansas State University in 1946 and has recently completed requirements for the M.S. degree in poultry pathology at the University of Delaware.

His previous experience includes seven years in private practice, which included poultry work; three years as director of a state diagnostic laboratory; three years as a college teacher, one of which was a visiting instructor in the department of chemistry, Wheaton (Ill.) College, and three years as a research worker.

General Mills Tells Of New Assignments

MINNEAPOLIS—New assignments of General Mills, Inc., grocery products division personnel have been announced by J. P. MacFarland, company vice president and division general manager.

J. J. Moran has been named director of cereals merchandising, a position that includes responsibility for merchandising of cereals, refrigerated foods, pet foods, and household products.

R. L. Reck has been named merchandising manager for cereals and pet foods, and I. H. Sugerman, merchandising manager for refrigerated foods and O-celo sponge products.

Moved by Chase Bag

DENVER — W. L. (Bill) Yearsley has been placed in charge of the Denver sales office of the Chase Bag Co. He has been with the packaging firm since 1937, most of this time as the firm's representative in Des Moines.

Here, he will service the produce, seed, milling, feed and fertilizer trades with multiwall, textile, plastic and open mesh bags and other types of flexible packaging.

Kansas' Flint Hills Pasture Region Supporting Record Number of Beef Cattle

MATFIELD GREEN, KANSAS—The famed Flint Hills pasture region of Kansas this year is carrying a record number of cattle but still is not filled to capacity. This could-be contradiction points up changes which have occurred and are occurring in this vast grazing area.

The changes are economical rather than physical in the Flint Hills—or Blue Stem region—a parallelogram from the Kansas River in eastern Kansas south to Oklahoma. All or parts of 14 counties are in the seven million acre area, four and a half million of it in pasture.

Rolla Clymer, El Dorado, Kansas, editor, said of the region in winter that "the Flint Hills are changeless. They have vast patience—and they can wait. Now they are waiting again—waiting for a modicum of moisture to sink into the roots of their grass, waiting for mildness of spring days to come again, waiting to welcome the 'big beef steer' back to their vastnesses, waiting to make flesh for a hungry world."

Now, however, it is not the big beef steer that is being fattened. It is young cattle that are being grazed here, then finished in feedlots and slaughtered at a comparatively young age to meet consumers' demands for smaller cuts of grain fed beef.

Wayne Rogler, Matfield Green rancher and handler of 25,000 acres of Flint Hills pasture, has been a student of grassland economy since—and before—his graduation from Kansas State University in 1926. He was born in Chase County as were his parents, Mr. and Mrs. Henry Rogler. His grandparents homesteaded land here more than 100 years ago.

While aware of the changing economy he said, "There will always be a demand for our grass. It is the best way we have to reduce cattle costs." He illustrated this by saying pasture gains can be put on for 8 to 10¢ lb. while similar daily gains in feedlots at present cost from 20 to 25¢ lb.

"Higher labor and feed costs are much less a factor when cattle do their own grazing."

However, Mr. Rogler is one of the first to suggest how it may be possible for Flint Hills pasture owners to meet the changing conditions—and perhaps to the advantage of the grass and everyone concerned.

Traditionally, mature cattle have been given five acres of pasture per head for the grazing season. Gains over the April 15-Oct. 15 season are around 250 to 500 lb. an animal.

Rule of Thumb

A rule-of-thumb for stocking cattle in the area is three yearlings to two mature steers. A rental of $20 per mature animal would return a gross of $4 an acre on five acres or $40 for two on 10 acres. With three yearlings on the 10 acres at $16 per head the gross income would be $48. The three yearlings weighing 1,350 lb. will not eat much if any more grass than two mature steers, Mr. Rogler said, as cattle eat approximately according to their weight.

Pasture studies at Kansas State University in Manhattan tend to support Mr. Rogler's experience that light cattle gain well on moderate stocking. Over the 10-year period 1950-59, light weight steers in the Kansas State tests gained the same in 150 days on three to four acres each as those given five to six acres per head. Gains of those on the smaller acreage averaged 235 lb. over the 10-year period and those on the larger acreage 234 lb.

"Mr. Rogler's suggestion is that stocking Flint Hills pastures at the rate of three younger cattle to two mature animals looks like a good proposal economically," Dr. Ed F. Smith of the Kansas State animal husbandry department said, adding that this appears to be a fairly good stocking rate.

"On a full six-month grazing season we figure in getting 2 lb. gains daily a head the first 90 days on pasture and 1 lb. daily the last 90 days," Mr. Rogler said in leading into another suggestion how the Flint Hills lend themselves to the shift from consumers' demand from aged to younger beef.

The change suggested is to meet the clamor of feedlot people and packing plant operators for young cattle in mid-summer. Meeting this demand, Mr. Rogler said, might be done by doubling the pasture stocking rate and grazing young cattle from April 15 to July 15, a 90-day rather than a 180-day pasture season and resting the pastures completely after mid-July.

"Grass stores most of its food reserves for the following year in the last half of the growing season. By making more use of the grass in the early part of the grazing season we will get more efficient use of it during its succulent stage."

Mr. Rogler added that this program would work especially well with yearling heifers. They get fat more quickly while yearling steers take longer, both on pasture and in feedlots, to get fat.

Experiments at Kansas State University, according to Dr. Smith, also show that steers gain an average of two pounds daily during the first 90 days or 180 lb. out of a total season gain of 225 lb.

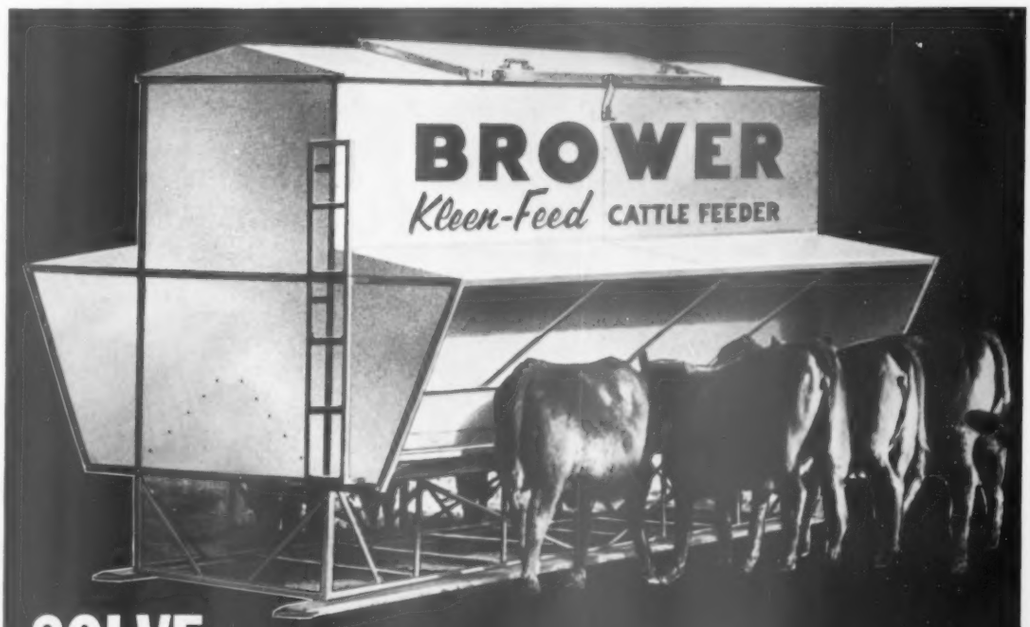
Mr. Rogler's brother, George, range and pasture specialist at the U.S. Department of Agriculture experiment station at Mandan, N.D., and familiar with the Flint Hills area, said recently it is his opinion that the 90-day pasture plan would be successful and that the grass normally would be in as good condition as after full season grazing.

The double-stocking, 90-day plan, if successful, would help answer the question about how the increased demand for meat by rapidly increasing populations is to be met. To maintain the current 83-lb. per capita consumption of beef in the U.S. will require an additional 250 million pounds of beef every year if the prediction of a population increase of three million annually in this country holds. This will require 1,500,000 more cattle each year, agricultural economists figure.

On the basis of 80% of the gains in the first 90 days double stocking would result in 360-lb. gains on two steers as against 250 to 300 lb. for one steer on full season grazing. And, ordinarily, Mr. Rogler said, feeders usually give more a pound for cattle in July than in October.

"Under the present government

(Turn to page 68)



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program, which has tended to stabilize grain prices, cattle feeders have come to depend on fairly uniform feed costs. This may be a reason for the increase in the number of feedlots which supply the change in consumers' demands for smaller cuts of grain fed meat.

"The rapid increase in the number of commercial and farm feedlots," Mr. Rogler added, "also is a partial reason why a large number of mature Texas cattle no longer are grazing here but are fattened in irrigated areas of the West and sold on Pacific coast markets."

In Kansas alone, 58,000 cattle were being fed in commercial feedlots July 15, according to the Kansas Crop and Livestock Reporting Service. This number is almost half as many cattle as the 120,000 being fed at the same time on Kansas farms.

Because of the movement of Texas and Mexican cattle to the West the Flint Hills depend more now on cattle from southern states such as Louisiana, Mississippi, Arkansas and others.

"The economy of the region, however, still depends to a considerable extent on locally-owned livestock. About two thirds of the 1 million head grazed here each year are home-owned," Mr. Rogler said.

When asked about pasturing cows and their calves on Flint Hills grass, he said he questions if it is economically feasible. He pointed out that a cow and a calf together require 10-12 acres and virtually year-round grazing. His experience is that a cow and her calf will eat and damage grass when given less than 10 acres.

"If the same cost per acre is used for a cow and calf that we use for other cattle, the cost per calf may be too high in comparison with calves raised in areas not as good as the Flint Hills.

"The income of this area," the Chase county stockman added, "could be increased materially by making greater use of our dry pasture grasses during the winter. Under good management there are several inches of grass left in the pastures after summer grazing. This dry forage, supplemented with a protein feed, can be profitably used."

Kansas State University tests have demonstrated that young, thin steers, either calves or yearlings, do as well over a year's time when wintered on Flint Hills pasture plus 2 lb. of soybean pellets per head daily as similar cattle wintered on prairie hay and 1 lb. of soybean pellets per head daily.

Dr. Smith said that in three years of testing the yearly gain for both groups, during wintering and summering, averaged 375 lb. Those wintered on pasture gained less than those on prairie hay in the winter, but caught up with the prairie hay wintered group during summer grazing.

With mature cattle in large numbers no longer being grazed in the Flint Hills, where are the cattle coming from to fill its pastures?

Mr Rogler's answer was "when it is generally known that this is the best grass for young, growing cattle as well as for fattening cattle, as has been proven, more young cattle will be coming to the area and our pastures will be in full demand."

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Urges Uniform Grade Terminology for Items

ITHACA, N.Y.—Agriculture is not getting its money's worth out of the promotion of farm products because of the different grade terminology used, according to Prof. O. F. Johndrew, Jr., Cornell University.

The poultry and egg industries, he said, spend thousands of dollars yearly promoting grades which are outmoded because they were developed a number of years ago and have not been modernized.

To solve this problem, the Cornell poultry specialist suggested that agriculture develop "a basic, uniform, standard grade terminology that is understandable to consumers for all farm products." In his opinion, using letters of the alphabet or Arabic numbers would be more understandable to consumers. Prof. Johndrew said the terminology now used for eggs differs from that used for potatoes, and both differ again from that used for red meats.

"Even within one farm industry the terminology varies," he said. "In the egg industry alone over four different organizations use completely different words to promote egg grades to the consumers."

Consumer Confusion

The poultry industry is also "tending toward premium qualities or grades which are not as economically practical as a good, generally accepted grade." Consumers, Prof. Johndrew added, just don't understand the difference between an AA and an A egg when both are of high quality.

He said industry should combine the grades so both are labeled either A or according to whatever terminology is used to indicate the best quality of all farm products.

Brand Promotion

Perhaps it would be best if the poultry industry spent more time promoting brand name, high quality products instead of premium grades, he said. In this way, when the consumer saw a brand name she would know immediately that the product was of high quality, the Cornell professor observed.

In the grading of eggs, he indicated there is not enough emphasis on the qualities which the consumer is looking for and too much emphasis on qualities which only experts can understand.

He recommended that consumer egg grades include something about the shell but be mainly based on the interior characteristics which the consumer is interested in.

Wholesalers often need more detailed grades and terminology on which to base their trade, Prof. Johndrew said, but consumers need consumer grades which they can understand and which tell them about the qualities they are looking for.

Ask Rate Reduction

BOISE, IDAHO — Idaho wheat growers have put in an application for rate reductions on rail shipments to West Coast ports, it was reported here.

Harold West, administrator of the Idaho Wheat Commission, said the request for the reduction is necessary to keep wheat freight costs in line with those for growers in other areas.

FEED SERVICE FORMED

DOVER, DEL.—Brandywine Feed Service, Inc., filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is 100 shares of stock, no par value. Corporation Trust Co., Wilmington, Del., is serving as the principal office.

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What New Depreciation Ruling Means to the Feed Man

By Paul Lockwood
Special Writer

Even though the U.S. Supreme Court did not name the feed and grain industries specifically in its recent decision on depreciation, there are many implications that can either increase or decrease income taxes of businesses in the trade.

Here are some questions and answers on how the new depreciation ruling will affect the feed man's income tax accounting and payments:

What was the ruling made by the Supreme Court?

The Internal Revenue Service argued, and the Supreme Court upheld, that the useful life of a depreciable asset means the normal time a taxpayer uses the asset—not the asset's normal physical life.

For instance, if you normally trade-in some equipment every four years, you would be entitled to use this as the useful life in determining your annual depreciation deduction. This applies even though the physical life of the equipment is ten or twenty years.

Does this ruling increase or decrease taxes?

It depends. If you have been using the 10-year useful life for the equipment, you would have a 10% annual deduction for depreciation. Under the Supreme Court decision you would now be able to use the normal four-year base period of useful life to you and deduct 25% each year as an expense of doing business from your income tax.

This example is based on the straight-line depreciation method (an equal deduction each year of useful life). It does not take into consideration special provisions of the accelerated depreciation methods or the salvage value of your equipment when you sell it after four years.

How does this decision effect the accelerated depreciation methods?

There are two basic rules that must be considered in using the accelerated depreciation methods:

1. The equipment must have an estimated useful life of at least three years, and at least six years for the special 20% initial allowance deduction granted recently in the code revision.

2. Salvage value of the depreciated equipment must be taken into consideration.

Thus, if your equipment has a physical life of 10 years it would qualify for the accelerated depreciation methods. However, if your usual practice is to sell or to trade every two years, you could not qualify for using the double - declining - balance method or the sum-of-the-digits method in calculating your depreciation.

If your usual practice is to sell or to trade every four years, you could apply the accelerated depreciation methods, but you could not take the extra 20% deduction the first year because it does not meet the six year requirement of the code revision.

What was the Supreme Court ruling on salvage value?

The Internal Revenue Code specifies that with the sum-of-the-digits depreciation method and the straight-line method the salvage value must be subtracted from the initial cost before determining the depreciation. The code further says that the equipment may not be depreciated below salvage value with the double-declining balance method.

The Supreme Court has ruled in its decision that the purpose of depreciation is to permit the taxpayer to recover the part of the cost of the equipment he cannot recover through salvage.

How does this affect tax deductions with the double - declining - balance method?

Assume the purchase of $10,000 worth of equipment this year that has a useful life of six years. (This permits it to qualify for the special 20% deduction and for the double-declining-balance depreciation method.) Also assume that at the end of six years the equipment will have a resale price (salvage value) of $2,000. You would have these deductions from your income tax:

Cost of equipment	$10,000
First year deduction of 20%	2,000
Balance	8,000
First year depreciation	2,667
Balance	5,333
Second year depreciation	1,778
Balance	3,555
Third year depreciation	1,185
Balance	2,370
Fourth year depreciation	790
Balance	1,560
Fifth year depreciation	520
Balance	1,040
Sixth year depreciation	347
Balance	693

Now, if at the end of six years, you sell this equipment for $2,000 (the estimated salvage value when purchased), you would have a long-term capital gain of $1,307. This would be taxed at the lower long-term capital gain rates.

However, the Supreme Court decision on salvage value does not permit this. You cannot depreciate below the resale price or salvage value.

Thus, in this example you could take the depreciation deductions listed for the first, second and third years. In the fourth year, however, you could only deduct $370 instead of the $790. This would take your deductions down to the point of the salvage value instead of below this

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point. And, in the fifth and sixth years you could take no depreciation deductions on this equipment.

Can a taxpayer now using a longer life change to a shorter useful life?

Many taxpayers have been using the suggested useful life terms suggested in the Internal Revenue Service's Bulletin "F". Yet, in many cases this is longer than the equipment is owned and the depreciation deductions do not recover the difference between the cost and the salvage value of the equipment when sold or traded.

On the basis of the Supreme Court decision, it would seem that you would have legal support if it is your usual practice to sell or trade before the end of the equipment's physical useful life. It may be possible to get a tax refund for past years. Check with your accountant or tax consultant about the possibility and procedure for handling this claim for a refund.

What will happen if I keep equipment longer than usual or anticipated?

From an income tax standpoint, there is probably little that will happen unless there is evidence that you were not honest in your anticipation. But, with all of the modern improvements in equipment, the chances are better that you will need to or want to sell or trade quicker to maintain your position with competition.

Buy Emergency Feed

MADISON, WIS.—About 600 dairy farmers in Ashland, Bayfield, Florence, Iron and Price counties in northern Wisconsin purchased 41 carloads of feed and grain under the federal emergency livestock feed program instituted in the counties last spring at the request of Gov. Gaylord Nelson, the governor's office said recently.

The office said savings under the program amounted to 50¢ to 80¢ cwt. Crops in the five counties had been hit hard by adverse weather in 1959.

Two Kellogg Staff Additions Reported

BATTLE CREEK, MICH. — Additions to staff of Dr. John H. Hopper as director of nutrition and of Dr. Roger E. Conant as research veterinarian have been announced by Dr. J. J. Thompson, Kellogg Co. vice president in charge of foods research.

Also, Roland E. Howell, formerly nutritionist, has assumed the newly created position of director of biology.

Dr. Hopper joins Kellogg's after four years as head of nutrition, research section, Armour & Co., Chicago. He attended the University of Arkansas, receiving his B.S.A. in 1949 and his M.S. in 1951. From 1952 until 1955, while completing the graduate program at the University of Illinois, he was a graduate assistant in nutrition. He received his Ph.D., with a major in nutrition and a minor in biochemistry from the University of Illinois in 1955. During the 1955-56 school year, he was assistant professor in animal nutrition at the University of Nebraska.

Dr. Conant has joined the company as research veterinarian. He received his B.S. degree from Michigan State University in 1957 and his doctorate of veterinary medicine in 1959.

During 1959-60 school year, he was an instructor at Iowa State University, teaching veterinary surgery and medicine.

Mr. Howell has been with Kellogg Co. since February, 1953. In his new assignment of director of biology, he will head up animal nutrition work, and assist in the development of new animal feed products.

Mr. Howell received his B.S. degree from the University of Arkansas in 1948. He entered the graduate school of MSU in 1949, with a fellowship in the department of zoology. He instituted the mink research project presently being continued on the campus of MSU, and received his M.S. degree in 1952, after which he completed course work in research for his Ph.D. degree.

Prior to completion of the remaining degree requirements he accepted a position as director of the Kellogg Co. feed research project of Michigan State University, shortly after which he accepted his position with the Kellogg Co.

Business Equipment Leasing Plan Told

NEW YORK—A new, long-term lease plan involving all typewriter, adding-calculating machine and systems products has been announced jointly by Kenneth R. Herman, president of the Remington Rand division of Sperry Rand Corp., and Robert Sheridan, president of the Nationwide Leasing Co. Nationwide will underwrite the Remington Rand lease program throughout the country.

"This new plan has been developed to meet the needs of both the smallest businesses and giant corporations," Mr. Herman said. "Management can now introduce cost-saving equipment into its offices without expenditure of working capital. For many firms, it will be possible to pay the monthly leasing charges out of money saved by the new equipment."

Leases can range in size from as little as $175 for a single adding machine up to hundreds of thousands of dollars for complete office systems. Where additional equipment is included under a master lease, a single transaction could involve several million dollars.

Leases will normally range from 39 to 65 months. In special situations, it will be possible to draw up agreements for as little as two years or as long as 10 years. Renewal options are standard for all leases.

The lease plan will be available throughout the country from Remington Rand salesmen and agents selling typewriters, adding-calculating machine and systems products.

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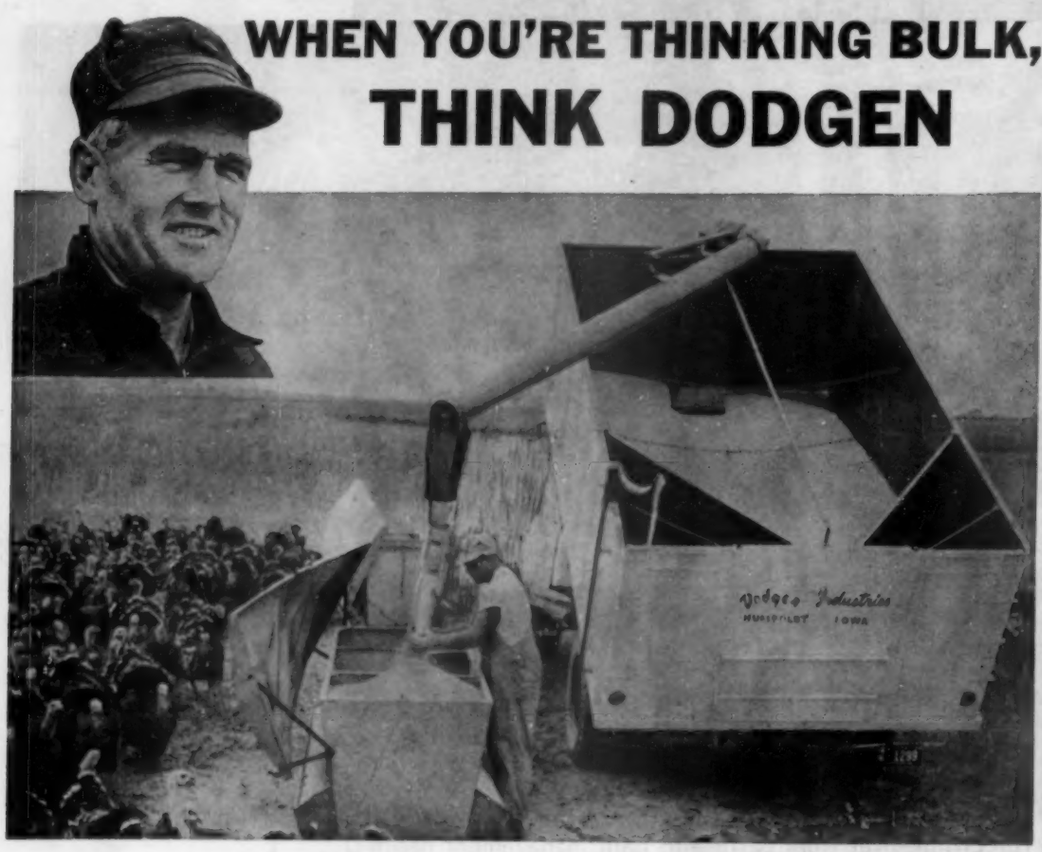

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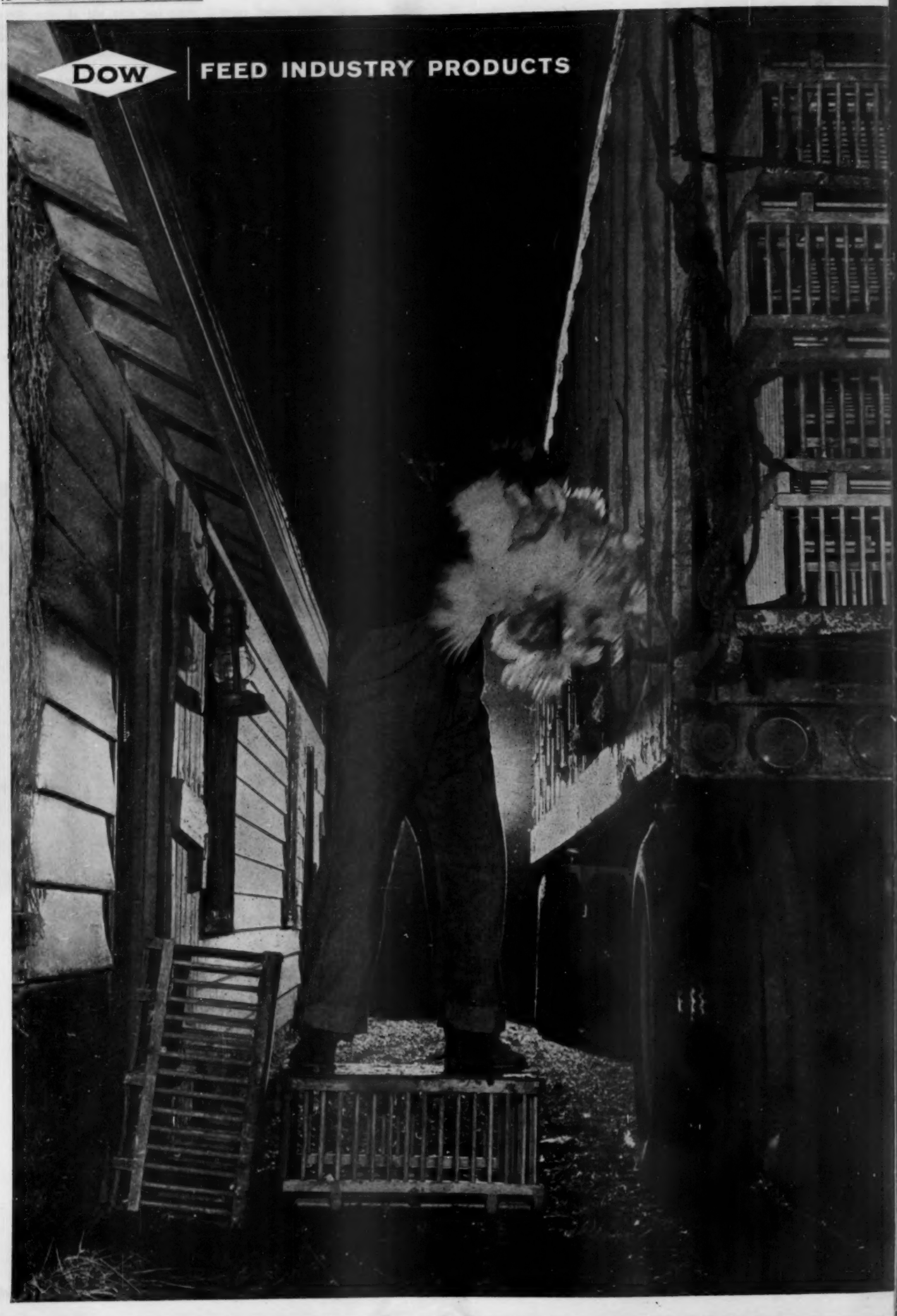
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	Other Coccidiostat Superior for Weight Gains	1	1	0	8	0	0	10
	No Difference in Weight Gains	0	0	0	1	0	0	1
	Zoalene Superior for Feed Conversion	26	10	14	15	2	6	73
	Other Coccidiostat Superior for Feed Conversion	1	2	2	7	2	0	14
	No Difference in Feed Conversion	2	3	0	1	1	0	7

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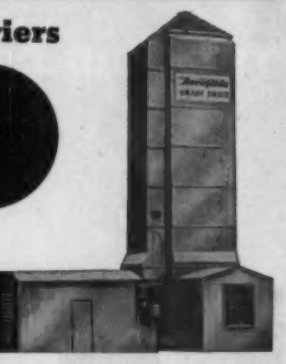

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No-Roughage Feed Under Test at Idaho

MOSCOW, IDAHO — A no-roughage ration experiment for fattening steers is now in progress at the University of Idaho's Caldwell Branch Experiment Station. Cooperating with the university in this study is the recently organized Idaho Cattle Feeders Assn. The association has provided both the cattle and the rations.

Purpose of the study, explains Dr. T. B. Keith, animal husbandman with the university, is to determine whether steers can be fattened on a ration without roughage and with barley as the principal ingredient. Steers went on feed late in June and are being fed for approximately 100 days.

"Since the ruminant has a stomach system that is believed to require roughage for most efficient use of feeds, it is not known whether a concentrate mixture without hay or silage can be utilized economically by the steer," he says. "Furthermore, if a concentrate mixture can be utilized by the fattening steer, what is the most economical combination of grains and other concentrates for optimum returns? These are among the top questions the cattle feeders hope to get answered in this experiment."

Idaho Concentrates

The experiment is designed to use concentrates that are produced in Idaho—chiefly barley, dried molasses beet pulp and corn.

Sixty steers weighing between 680 and 790 lb. were divided into six groups of 10 steers each for feeding. Six ration combinations are being studied. Steam rolled barley is the main ingredient in the ration.

There are many unsolved problems on the use of a no-roughage ration for fattening steers. Some of these, Dr. Keith points out, are concerned with age and size of steer, length of feeding period and method of processing the barley. There are some vague indications that the barley must be steam rolled and that the steers should not be fed longer than 100 days.

Rations Used in Study

The following rations are being used in this study:

The steers of Lot 1 are being fed 2 lb. of the concentrate mixture per 100 lb. live weight with all the corn silage and alfalfa hay they will consume. The steers of Lot 2 are being fed a ration of corn cob meal with dried molasses beet pulp. The steers of Lot 3 are being fed a steam rolled barley ration. The steers of Lot 4 are receiving a steam rolled barley ration with 15% dried molasses beet pulp. The steers of Lots 5 and 6 received the same ration as those of Lot 4 with 30 and 50% dried molasses beet pulp, respectively.

All lots receive diethylstilbestrol, vitamin A concentrate and a protein supplement. And all lots of steers were fed a roughage mixture of corn silage and alfalfa during the first two weeks.

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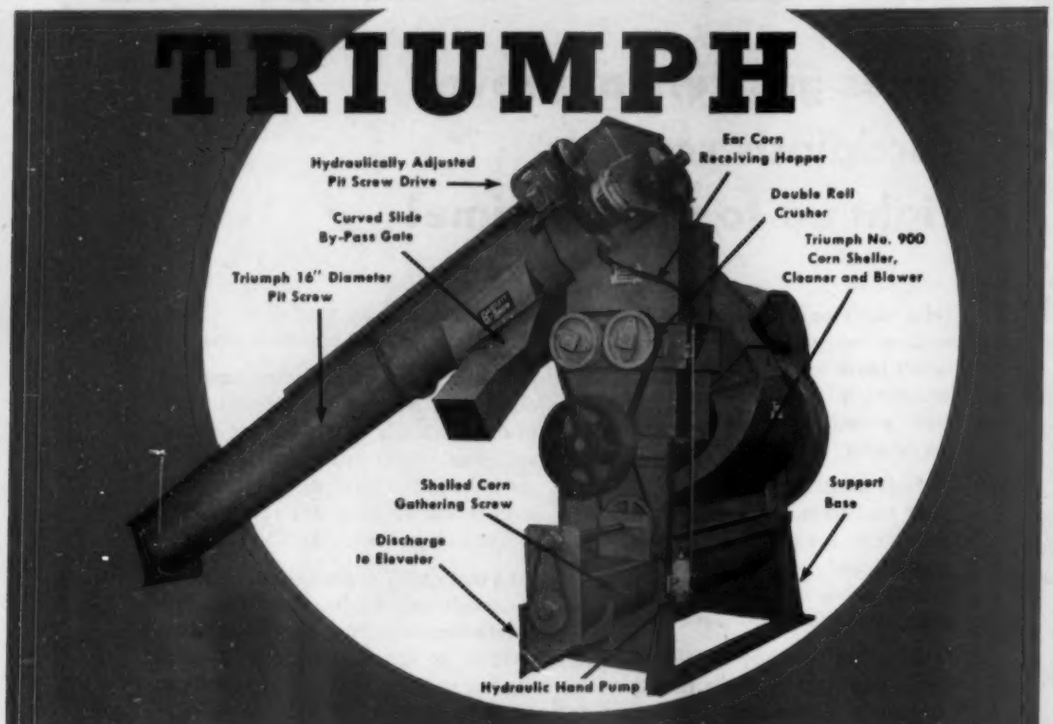
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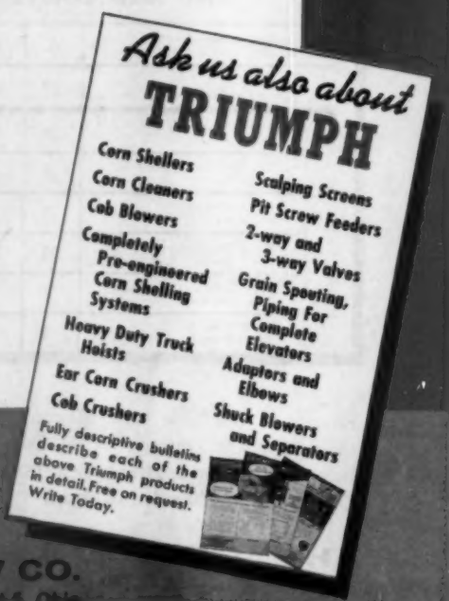
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Laboratories Name Personnel Manager

MADISON, WIS. — American Scientific Laboratories, Inc., has announced the appointment of Robert J. George as personnel manager.

He formerly was employed by the State of Wisconsin in personnel consulting work to municipalities and counties and by the Gisholt Machine Co., Madison, as director of safety and training and as employment manager. He also has had practical experience in production and clerical work in a foundry, paper mill and milk processing plant.

A graduate of the University of Wisconsin, Mr. George majored in personnel and labor management. He is a native of Kaukauna, Wis., and served as a gunner in the Air Force during World War II.

North Dakota Sets Hatchery School

FARGO, N.D.—North Dakota's annual hatchery school and poultry institute will be held at North Dakota Agricultural College here Aug. 22. It is sponsored by the North Dakota Agricultural College and the State Poultry Improvement Board.

Items to be covered in the training program include pullorum and typhoid testing and selecting birds for hatchery supply flocks. Also to be discussed are the national and the North Dakota Poultry Improvement Plans and "Your Place in the Poultry Industry."

Members of the NDAC poultry husbandry department will conduct the school. A written examination will complete the day.

More Big Turkey Growers in Minnesota

ST. PAUL—The number of large-scale turkey producers in Minnesota is climbing rapidly, according to a recent University of Minnesota survey, reported in the current issue of Minnesota Farm Business Notes, an agricultural extension publication.

Only 1% sold 50,000 or more birds in 1955, the report shows. This year, 10% will reach that level of production.

Minnesota's turkey production increased from 4 million birds in 1950 to about 15½ million in 1960—making the state first in the nation in number of turkeys, the report notes.

Economists Turner Oyloe and Dr. D. F. Fienup surveyed 800 members of the Minnesota Turkey Growers Assn. Half of these members had quit raising turkeys in the last few years. But of the rest, 20% had sold 10,000 or more birds in 1955, 34% sold that many in 1959 and about 42% will reach that level this year.

More Specialization

While growing in size, the turkey operations have become more specialized, the report shows. Of producers marketing 10,000 or more birds in 1959, half had no other source of income. And of the large producers who did have other enterprises, most depended on turkeys for the major share of returns.

Small producers weren't quite as specialized. Of those marketing under 10,000 birds annually, three-fourths said turkeys accounted for half or less of their income.

Mr. Oyloe and Dr. Fienup also surveyed hatcheries and processors. Three hatcheries in 1958 turned out more than half of the total hatch and 11 accounted for more than 75%.

Processing has been more concentrated, with more than 75% done by 10 plants in 1958. Turkey production, hatching and processing have become spread more evenly around the year. In 1957, only 76% of Minnesota turkeys were hatched in the first six months of the year, compared to 94% in 1951.

Mr. Oyloe and Dr. Fienup note three forces behind the shift from seasonal turkey production. First, consumers' habits have changed. Turkey is no longer simply a holiday treat. Second, farmers, hatcheries and processors are trying to spread their operations over a longer period to more fully use their investments.

Third, the industry has found it easier to adjust production to market needs and opportunities through vertical integration—linking two or more stages of the marketing process under one firm or management. The processor-grower contract is an example. Another is turkey flocks owned and managed by hatcheries and processors. And some turkey growers have established hatcheries or built processing plants.

Growth of the turkey industry is due to many incentives. Efficiency has shot up. Turkey death rates have dropped. Credit has been widely available; only 18% of the growers surveyed provided all their own financing.

The shift of retail marketing to chain stores and other large retailers has helped concentrate turkey production among a rather small number of producers, hatcheries and processors. Large producers are best able to furnish supplies, uniform quality and even size which these retailers want.

Production vs. Demand

A big problem now is that turkey production seems to have outrun effective demand. Although farmers sold 269 million lb. more turkey in 1958 than in 1952, the income from birds sold fell $39 million. Part of the decline can be explained by the 13% drop in all farm prices. However, turkey prices in the same period fell 22%.

The decline, Mr. Oyloe and Dr. Fienup say, might tighten the amount of credit available and the degree of control creditors will want in turkey operations. Although such control in the past has been limited to advice, there may be a stronger movement to extend this control if prices drop further.

Stilbestrol Implant Ups Steer Gains

COLLEGE STATION, TEXAS—Steer calves with stilbestrol implants made significantly higher gains during a recent test at the Southwestern Great Plains Field Station, Bushland, Texas.

The respective total gains for steers with three, two, one and no stilbestrol implants were 663, 657, 616 and 595 lb. in a 461-day grazing and feeding test, according to George F. Ellis, Jr., associate animal husbandman, Southwestern Great Plains Field Station, and Prof. J. H. Jones, department of animal husbandry, Texas A&M College.

Ear implants of 36 mg. of stilbestrol were used.

Implanted steer calves made significantly higher gains than non-implanted calves in the 133-day wintering period. The respective average daily gains were 0.76 and 0.55 lb. In the succeeding 178-day grazing period, those implanted for the first time had significantly greater gain than the group implanted in both periods and those not implanted. Respective gains were 1.67, 1.46 and 1.44 lb.

The non-implanted steers averaging 1.67 lb. daily made significantly less gain than the other groups in the following 150-day feeding period. Gains for the groups implanted three, two and one time were 2.02, 1.97 and 1.95 lb., respectively, compared with 1.67 lb. for the non-implanted steers.

Carcass grading favored the non-implanted steers, the investigators said.

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Free-Choice Feeding of Trolene for Reduction of Cattle Warble Infestations (Oestridae—Diptera).

●G. B. Rich, Canada Department of Agriculture, Kamloops, British Columbia, Canadian Journal of Animal Science, Vol. 40, No. 1, June, 1960, pp. 30-34.

ABSTRACT AND COMMENT

Recently there has been much publicity and investigation of the various systemic insecticides for grub control in cattle. Conflicting results are apparent when many of the experiments are reviewed, even when conducted by the same station (Kansas, 1960, etc.).

In some of the trials, boluses or feed additives of systemics have given better results than when used as sprays. In spite of the promise of certain of the materials, some seasons' figures showed that all methods gave relatively poor control (Kohler, 1959). The Canadian worker (Rich) states that probably some of the variation with the poor performance of "in-the-feed" methods and the inconsistency of results is caused by individual animal behavior on a free-choice feeding program.

Unfortunately, timing of applications is vital if proper grub control is to be achieved. Generally, this should be done according to local conditions and fly activity. This may vary from June to late September or early October for most of North America. But, ranging beef cattle cannot often be treated with boluses or sprays very conveniently during this period and the "in-the-feed" method is the only alternative choice.

The Canadian work showed that Trolene (Dow-ET-57) (Ronnel) reduced the numbers of cattle grubs by 83-95% when total doses of 180 and 250 mg. per kg. of animal weight were fed to calves in the feed at daily doses of 10 and 15 mg. per kg.

The reduction in grubs was significantly greater than those produced by lower daily doses, or by the single administration of Trolene boluses at 105 mg. per kg.

It should be noted, however, that there were very high grub infestations in various individual animals in all test groups except those at the two highest levels, and grubs were not eradicated by any of the test treatments. Only the 250 mg. per kg. total dosage level reduced the grub population below the level of infestation observed in two semi-isolated, untreated herds. The author points out that further investigations are therefore necessary to determine the significance of the survival level of grub population in the perpetuation of treated infestations. No toxicity symptoms were exhibited in feed-treated calves, but bolus-treated ones showed transitory toxicity.

Obvious Conclusion

It is obvious from the above report that treatment should be so conducted to reduce the grub population as much as possible. Simple economics show that the higher insecticide requirements of the more effective feed treatments more than offset the savings achieved in labor and equipment over the bolus treatment.

It should be pointed out that much more important than simple savings, is the fact that the higher levels of the "in-the-feed" treatment achieve higher grub reductions and therefore would be justified on this basis alone.

"In-the-feed" treatments have been permitted in Canada for some time, but it is only recently that the Food and Drug Administration has approved such use in the U.S. Unfortunately, the level approved at present is too low to be really effective in grub control according to the Canadian results. Higher level petitions have been filed and may become legal very soon and feed manufacturers should watch for further developments and announcements in this area.

Since the "in-the-feed" method seems to be one of the best, if not the best, method of administration we should soon have a new sales tool to help market beef feeds.

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Article Discusses Cow Pools for Kentucky

LEXINGTON, KY. — A seven-page mimeographed article, entitled "Can Dairy Cow Pools Be Successful in Kentucky?" has been issued by the University of Kentucky dairy science department.

The publication, listed as Misc. 196, was written by Dr. D. M. Seath and E. C. Scheidenhelm. Dr. Seath is head of the department; Mr. Scheidenhelm is dairy specialist for the Kentucky Agricultural Extension Service.

Cow pools imply a system where dairy farmers can put their milk cows into a central location for feeding and milking. Milking records are kept centrally and the farmer is paid a certain price for his portion of the milk sold. Some cow pools are privately owned and operated, others organized as cooperatives. Thus far no cow pools have been organized in Kentucky.

The article discusses types of cow pools, the problems, advantages, disadvantages, financing, market outlets, management, etc.

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Livestock Numbers in South Going Up; Feed Companies Watch Sales

By JAMES K. RUTTER
Feedstuffs Staff

Feed manufacturers generally seem to agree that the volume of feed sold in the southern states is on the way up. Agricultural adjustment is bringing many changes, and one of them is the sudden growth of livestock numbers in this region.

The hog industry is a good example of how many southern farmers are beginning to turn to livestock specialization. In spite of the fact that there are fewer farmers each year, hog numbers are climbing. These farmers are building modern production plants that demand a business approach combined with top-notch management and an application of research findings.

Don't sell the south short on its ability to raise hogs. Livestock extension specialists agree that hog numbers in the south could almost "explode" in the next 5 or 10 years.

L. H. Simerl, agricultural economist at the University of Illinois, reported over a year ago that the south's hog producing potential is great enough for it to be a serious threat to Midwestern hog growers.

"I have heard men from southern states say 'we took the broiler business away from you—and we'll take the hog business, too,'" said Mr. Simerl.

Under-Dog Determination

One source in the feed manufacturing industry reports the same feeling:

"The hog growers in the southern states seem to possess a real under-dog determination," he reports. "They recognize that the Midwest has the hog industry now . . . but they also know they have some natural advantages and they are out to get their share of the business."

Most of the economists in the south deny that their states could ever match the Midwest in hog production. "We still have a long way to go before we produce enough hogs to meet local consumption," they say.

For example, South Carolina, with about 950,000 pigs marketed in 1959, produced roughly 50% of the pork consumed within the state last year, according to Clemson College extension specialist Lewis Cato. Most of the other states are importing pork from the Midwest, too.

There is little reason to doubt the success of most of these farmers moving into the livestock industry, either. It's easier now to find banks that will back livestock projects, and the extension specialists, eager to boost their states' agricultural position, are "johnny-on-the-spot" with advice and management tips. The farmers, in turn, are extremely susceptible to new research findings and advice.

For some farmers, a hog or livestock project can be classified as a last-ditch stand. If the production of livestock won't return an adequate income, then the only alternative for many might be to take a factory job in town.

Climate is one natural advantage favoring hog production in this southern region. Pigs can be farrowed and raised all during the year with a relatively small investment in buildings.

Grain Production

Limited grain production is one disadvantage. But this isn't as serious a handicap as one might guess.

Right now, Alabama is exporting about 20% of the grain produced within the state. Maximum yields haven't been reached yet, and many acres are still being used to grow cotton and peanuts instead of corn. Also, grain can be carried in by barge for about 10¢ a bushel, according to one economist.

In Georgia, now 9th highest pig producing state in the nation, some grain is being imported to feed the 3 million hogs going to market each year.

"This doesn't necessarily mean we are less competitive, though," says James Christian, swine extension specialist at the University of Georgia. "It looks as though we can ship grain down here from the Midwest by barge nearly as economically as we can raise it. And if the cost of shipping grain in becomes prohibitive, we still have lots of land not being tilled for maximum production."

South Carolina has a more serious grain shortage. Clemson's Lewis Cato reports that to reach farmers in this state, grain from the Midwest has to be trucked for some distance. The trucking costs over this distance become almost prohibitive.

"We can still develop grain production in the state, however," says Mr. Cato, "so hog numbers can continue to climb some in South Carolina."

Diversified Farming

While there are many large and expanding hog farms in these states, most of the average-sized farmers are still devoting much of their energy to the growing of cotton, peanuts or rice. A rather striking decline in the prices of these products will have to occur before a large percentage of the farmers will greatly expand livestock production, says one economist.

Even so, there are already many expertly managed and elaborate hog operations that set the stage for the future. For example, take the farm of John B. LeGarde, Piedmont, Ala.

Mr. LeGarde, also a cattle feeder, is raising from 1,200 to 1,500 pigs

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for market annually. He has been in the business for 15 years.

"The three breeds I've been using in my cross are Landrace, Hampshire and Yorkshire," says Mr. LeGarde. "I'm real pleased with the results." He recently bought a Duroc boar and will introduce this line into his breeding herd next.

Management in the LeGarde operation is top-flight. Emphasis is placed on improving the quality of the herd. Replacements for the sow herd are carefully selected, and boars must meet rigid specifications.

The sows and gilts range on pasture . . . but the pigs headed for market touch "real dirt" only once. At weaning time (about six weeks) the pigs are moved from the farrowing house to growing and fattening pens. As the pigs walk the few feet across this narrow road, they touch ground for the first time—and in most cases, the last time. They go directly from the fattening pens to slaughter.

The scrubbed farrowing house has 38 individual stalls. "Farrowings go on the year round," points out Mr. LeGarde. "But we do try to cut down on the number of pigs born in September. This seems to be the month when disease is the greatest problem."

The all-concrete farrowing house, measuring 25 by 170 feet, gives the pigs every possible opportunity to get off to a fast, healthy start. Mr. LeGarde knows that sanitation is vital to a good hog operation. The building is washed down regularly, and submitted to steam cleaning periodically.

An electric heating cable runs under the concrete through each farrowing stall to give the new-born pigs warmth. Heat lamps are also used at times. Each pen is equipped with creep feeders. Fans ventilate the building now, but Mr. LeGarde is considering the installation of air conditioning.

"Across the street" in the growing and fattening area, sanitation still gets lots of attention. This 145-foot building is cleaned and washed down regularly. The liquid manure is carried by gutters into a sump. From there, it is carried to the fields. Steam cleaning is used in this building, also.

The growing and fattening house, a three-sided building, is divided into pens. The young pigs start at one end and work their way down the building. When they reach the other end, they are ready for market.

"It takes a little over 5 months to finish out the pigs," said Mr. LeGarde. "Once a month the pigs nearing market weight are run over a scale set at 210 lb. If the scale breaks, the pig is loaded for market.

"We're pleased with the high percentage of No. 1 pigs we produce," he adds, "for these top animals pay a premium."

The importance of balanced rations, use of antibiotics and additives is also recognized on this farm. Mr. LeGarde's operation includes a feed mill where he does his own mixing.

Management Is Key

Management is the key to a successful hog operation. Midwestern hog growers have recognized this for some time. Now, farmers in the southern states are becoming equally aware of it.

"The southern farmer is very definitely coming into his own in hog production," said a general sales manager of one of the big feed manufacturing companies. "This is quite evident from a look at our tonnage figures for the area."

"It looks as if we'll be selling complete pelleted feeds to these farmers," he adds. "We don't anticipate large sales of pre-mixes. And some concentrates from our mills will be sold to local mills in the south for processing."

The south does have a good livestock potential. It will probably be slow in developing, but leaders in the area are certainly aware of the prospects, and are working hard to help farmers improve their lot through livestock.

Quaker Oats Names Ohio District Head

CHATTANOOGA, TENN. — Henry T. Chandler, manager of the Chattanooga plant of the Quaker Oats Co., has been promoted to manager of the Ohio district sales office with headquarters in Cleveland, according to announcement by John D'Arcy, Jr., vice president of the firm.

Mr. D'Arcy also announced that James C. Klima, superintendent of the company plant in Akron, has been assigned to the Chattanooga plant as manager.

Mr. Klima joined Quaker Oats as a clerk in the feed sales office of the Cedar Rapids plant in April, 1923. He was promoted to foreman of the oat mill and later was advanced to manager of the Sherman, Texas, plant.

In 1942, he returned to the Cedar Rapids plant as oat mill foreman. He was named manager of the oat mill at St. Joseph, Mo., in 1944 and in 1947 was named manager of the cereal mill at Akron. He was named superintendent at the Akron plant in 1953, being transferred here from that post.

Mr. Chandler joined Quaker as a production trainee at Cedar Rapids, Iowa, on Jan. 1, 1949. He served in the U.S. Navy from July, 1943 until July, 1946.

After two promotions he was transferred from Cedar Rapids to superintendent of the plant at Lawrenceburg, Kansas, and was transferred to Chattanooga as superintendent in August, 1957. He was named plant manager on Feb. 15, 1959.

JUROR TRYS TO MAKE IT HOME ON A FOWL; JUDGE STOPS PLAY

DENVER, COLO.—District Judge Clifford H. Darrow offered to spend his noon recess here feeding the chickens for a prospective juror rather than to excuse him from the jury panel.

Judge Darrow told Casimer J. Czarnick, of nearby Aurora, a truckman employed at Denver Union Station, that he used to raise chickens himself and would be happy to go to the Czarnick farm and attend the fowl personally.

Mr. Czarnick had asked to be dismissed from the panel because, he said, his wife was ailing and needed to see a doctor, and there would be, therefore, no one at home to tend the chickens.

The judge denied the request, lectured Mr. Czarnick regarding civic duty and pointed out that jury service is inconvenient to almost everyone—no matter who has to be fed.

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RESEARCH

(Continued from page 54)

marbling of pork loin has merit in evaluating tenderness. Texas workers have reported finding differences in tenderness of beef of the offspring of different sires. They felt, in years to come, we would be selecting beef for tenderness by the sire we select.

"We are working with the department of home economics researchers in studying the flavor of lamb," he said. "Differences in the flavor of lamb have been found, and we are confident that a trained taste panel can pick up these differences. The problem is to find a faster and less expensive means of evaluating these differences."

Mr. Rupnow noted a study he was finishing of the effect of fat in the ration on tenderness. Twenty Palouse and 20 Hampshire hogs were used. One half of the hogs received a control ration, and the other half received a ration with 10% added fat. There was no difference in tenderness of pork because of the added fat, he said. However, it was found that there was a difference between the two breeds. There was a significant difference between litters.

"The quality of pork can be increased by evaluating the meat from full sister or brother to animals that you wish to save for breeding stock," he said. "At the present time, only limited facilities are available for evaluating pork quality. In years to come, service organizations can be set up to evaluate the quality of meat and provide this information to producers."

OUTLOOK FOR HOGS, SHEEP— "The large size of the reduction in last spring's pig crop indicates that the price decline from the summer peak will be very moderate this year," according to Karl Hobson of the host school's extension service.

It is doubtful that hog prices will fall much, if any, below $17 at any time in the coming fall and winter, Mr. Hobson added.

The length of the upswing in hog prices is usually somewhere between 1½ years and 2½ years, he pointed out. Thus, the peak of prices in the current cycle is likely to come either in the summer of 1961 or the summer of 1962, he said. The next low point is not likely to arrive before some time in 1963 or 1964.

"The timing of these price movements will depend on several things that are unpredictable," said Mr. Hobson. "One of these is trends in feed costs. Others include changes in the supply of competing meats, changes in consumer buying power and changes in the value of the dollar."

Production of beef is likely to be increasing, even on a per capita basis, each year for the next several years, unless widespread drouth intervenes, he said. If widespread drouth should come, he added, it would bring a sharp drop in cattle prices, but the length of the cattle price drop would be shortened.

"Cattle price has some influence on the price of hogs," he said, "but less than you might think. Hog prices are often high when cattle are low and vice versa. However, if beef supplies should be abundant the next time we have large supplies of pork, the price of both hogs and cattle would be quite low."

As has been the case for many years, trends in cattle prices in the years ahead will govern to quite an extent price trends of sheep and lambs, he said. This indicates that there will be a downward trend in the price of sheep and lambs for four or five years, unless widespread drouth should speed up and shorten the drop in cattle prices. The reason for the dominance of cattle prices is apparent when we realize that per capita consumption of lamb and mutton in this country is only about 5% as large as that of beef.

Sheep and lamb numbers are expanding in the U.S. but not as rapidly as beef cattle numbers, he noted. For example, in 1958 and 1959, cattle numbers increased 9% while sheep numbers increased only 7%. This indicates that although sheep and lamb prices will follow cattle prices, they may not decline quite as much. This was true of the last price decline from 1952 to 1956, he pointed out.

SWINE RESEARCH — An outline of the work that has been done in the past year on various swine research projects at Washington State University was given by James C. Nofziger of the host school.

Mr. Nofziger noted that in addition to the two projects underway for several years, the school started a new one dealing primarily with environmental problems.

The oldest project is the one which is known as the "Swift Project," he said. This project was financed in a great part by gift funds. It was designed to help answer the question whether or not breeding animals should be selected when fed to show-finish or to suboptimal finish. The latter might be the case with farm rather than show or sale purchased animals. It was also desired to learn whether greater progress in selection for economical characteristics could be made more effectively on one nutritional plane than on the other, he added.

This experiment was carried out for 10 generations. Large quantities of data were taken and many publications have resulted. The entire experiment has been written into an experiment station bulletin, Mr. Nofziger pointed out.

In this experiment, for 10 generations, half of the animals were maintained on full feed and half on 70% of full feed, he said. Selections and measurements for various characters were made within planes of nutrition. Data taken showed that there was an improvement in rate of gain in both planes. But the selection had been for two different things. In the better-fed animals, selection was for improved appetite, greater feed capacity, etc. In the poorer fed animals, selection was for increased feed efficiency. "This is an example of the effect of environment or management upon the genetic expression of an economically important characteristic," he said.

As would be expected, the full-fed animals reached market weight earlier and carried more fat than the under-fed animals; however, there was little difference in size of loin eye muscle and other characters which could be attributed to the plane of nutrition, he added.

"In general, the results of this long-time experiment support the contention that breeding animals should be selected under the same environmental conditions as those under which the commercial animals

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are to be produced," Mr. Nofziger said.

"In our Palouse project," he said, "we have continued to improve the Palouse breed developed here at Washington State University beginning in 1945. The Palouse breed continues to demonstrate excellence in litter size at birth and weaning, weaning weight and rapidity at which market weight is achieved. During the past year, we continued to wean 10 pigs to the litter at a 56-day weight of 60 pounds. Two pens of eight pigs each on test at the Washington Swine Breeders Assn. test station reached market weights of 197 and 181 lb. at 146 and 122 days respectively."

Slaughter data have shown that further work is necessary in carcass characteristics, he noted. As a consequence, slaughtering and taking carcass measurements from two pigs raised to market weight from all litters from which breeding stock might be selected has begun.

This project is to be continued with the aim of further improving the carcass qualities, he said. Also, designed to explore means of identifying the more meaty pigs at an early age without slaughtering them are being worked upon. Then the more desirably muscled pigs in a litter can be selected while still with the sow. This will reduce the possibility of castrating the boar pig that turns out to be the more heavily muscled individual in the litter, he added.

A new project entitled "Environmental Influences on Growth and Reproduction in Swine" was begun this past year. The purpose of this project is to investigate the influence of certain management practices on the production and reproductive qualities of swine, Mr. Nofziger said.

One phase of the project has been concluded, but the data have not yet been analyzed, he said. This phase dealt with the effect of transportation, change in environment, and a combination of these, upon the reproductive efficiency of bred gilts at two stages of gestation.

"Preliminary data indicates that stresses such as transportation and changes in social environment such as the moving of bred gilts from one farm to another have no detrimental influence upon the litter being carried by the gilt at the time," he said. "This implies that breeders hear more often of the poor litters than the good litters produced by bred gilts purchased at sales or through private treaty. Evidently, if anatomical injury is ruled out, the transporting of bred gilts from the farm of origin to the farm of the purchaser has little if any effect upon the reproductive performance of the gilt."

Planned for this year are experiments investigating such things as the effect of space allotment and numbers of pigs raised together upon performance of growing-finishing swine in confinement, he said. Also studied will be the effect of litter size and early weaning upon subsequent reproductive as well as productive performance.

"During the coming year, emphasis in our swine research will be on the continued improvement of the Palouse breed and upon various management phases of swine production in an attempt to more effectively use the ever-increasing advancements in the nutrition, physiology and breeding," Mr. Nofziger said.

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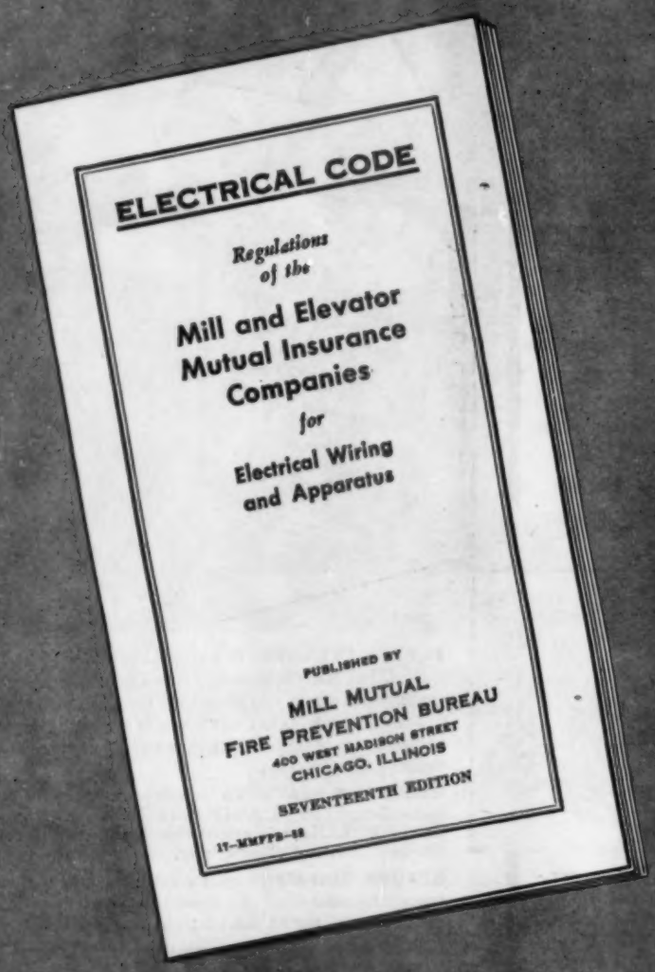

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Traffic Head Named By Spencer Kellogg

BUFFALO, N.Y.—Spencer Kellogg & Sons, Inc., elevated Sherman F. Masman, Jr. to traffic manager. This announcement was made by Fred W. Thomas, the company's president. Mr. Masman succeeds Harold Wright, who resigned to accept a position with another organization.

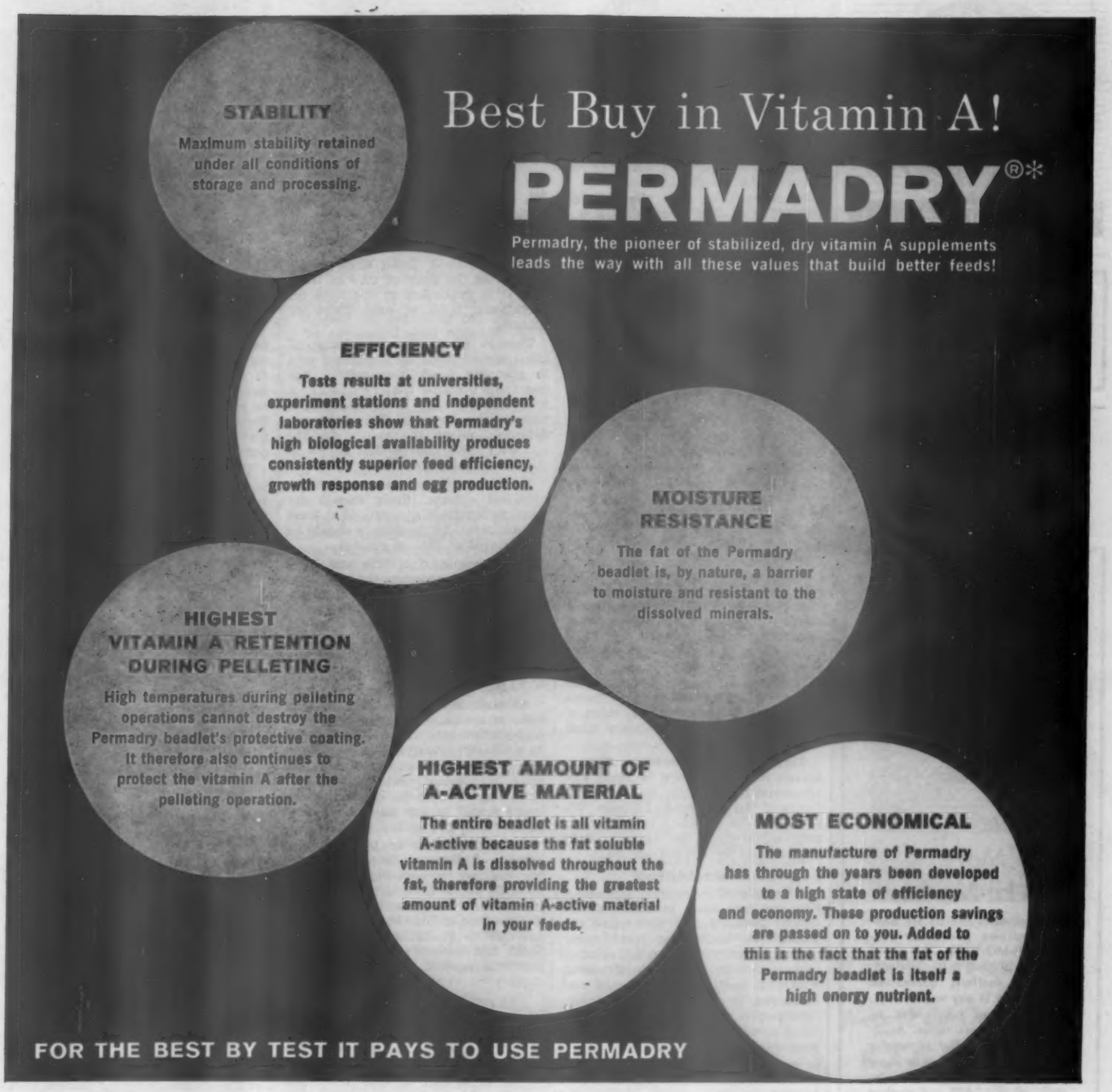
Mr. Masman has been associated with the Buffalo traffic department of Spencer Kellogg since 1939. In 1942, he was named traffic representative at the company's Minneapolis plant and in 1944 assumed a similar position in the Long Beach, Cal., location. He returned to the Buffalo office in July, 1952, and in January, 1956, was appointed as assistant traffic manager.

Wallace S. Campbell has been appointed assistant traffic manager.

Mr. Campbell has been with Spencer Kellogg & Sons, Inc., since 1936, when he joined the shipping department of the Chicago plant. He was appointed traffic representative at that location in 1944 and in 1951 was transferred to the Buffalo office. In 1956, Mr. Campbell was appointed transportation analyst.

DEALERS INCORPORATE

DOVER, DEL. — Eastern Shore Grain & Feed Dealers Assn., Inc., has filed a charter of incorporation with the corporation department of the secretary of state's office here. It is a non-stock organization. Sidney Schwach, Milford, Del., is serving as resident agent.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A Look at . . .

Feed Business Operating Costs

"A few dollars spent improving financial control often locates trouble spots and may mean the difference between success, failure."

By Dr. John W. Sharp
Ohio State University

(EDITOR'S NOTE—Here is a report on an Ohio research project that analyzes the relationships of costs to the other facets of the feed trade business. The article is from a talk presented recently by Dr. John Sharp, agricultural economist at Ohio State University, at the Eastern Federation of Feed Merchants Convention at Lake Placid, N.Y.)

When I first started my work in research with the grain and feed firms of Ohio, the most frequently asked questions were "How can I cut my expenses and raise my profits?" or "How can I increase sales to return more gross margin to cover my high and ever-increasing cost?" Yet when a manager was advised to cut a certain cost, his answer was usually, "If I do I will lose sales and net profit."

If I asked another manager why he didn't hire a salesman or add a piece of machinery or use some other accepted method of increasing sales, he would usually reply, "Yes, that would be fine but it will cost me more than the profits I would receive from such a venture. Thus, I would have less profit than I do now."

Each casual observation I made resulted in similar statements by most of the managers contacted. I quickly learned that it requires only a short time of association with this feed trade to realize the importance of relationships between the cost of operation and the many other factors of the business. Certainly we must begin somewhere to arrive at a balance of these items. Let's take a look at what we have found.

Three years ago, we initiated a research project in Ohio to study the relationships of costs to the other facets of the feed trade business. We attempted to associate those factors that would yield the highest profit combination for the average firm.

Audits Analyzed

A sample of more than 100 elevators and feed firms in Ohio was selected. Detailed cost data were obtained for each firm from many sources. Usually the manager or owner furnished most of the information. Financial audits were analyzed and compared. In addition to these audits, information was obtained and analyzed on various specific items of cost from the monthly and weekly records of each elevator.

The sample was stratified according to the size and location of firms so that enough elevators fell in each group to furnish valid comparisons. To decrease the effect of disturbances from crop failures or other outside factors that might affect the industry or the firm, the same data were obtained from each of the firms over a period of three years.

Since most managers and owners demonstrated more interest in costs, the first phase of the research was concerned with an analysis of cost items. The cost records were divided into two main categories: "fixed" and "variable" costs.

Most of you are familiar with the definition of fixed costs. The basis for fixed costs is usually found in the balance sheet under "fixed investment," consisting primarily of buildings and equipment. Fixed costs appear in the operating statement usually in the form of taxes, insurance, and depreciation.

After capital investments are made in buildings and equipment, these costs will not change in total amount. The only method of reducing fixed cost per unit of sales is to increase the number of units moving through the fixed investment of the firm.

Capacity Operation

Of course, there are physical limitations to the amount of sales that can be made with a given sized plant. Thus, from the point of view of fixed cost, it is important to approach an operational level of near 100% of capacity.

This is where the knowledge of management plays an important role in planning fixed investments. Accountants organize depreciation schedules on fixed investments over various time periods. This rate can definitely affect the yearly facility and equipment charge that shows in your financial statement.

In this day of rapid moving technological change, firms should depreciate buildings at a rate of at least 4% annually. All machinery should be depreciated at 10% or greater.

For example, if a firm had 1,000 units of volume moving through a facility that cost $50,000 with a depreciation rate of 4%, it would have a total yearly depreciation of $2,000 on the books. If you divide the 1,000 units moving through the firm into the 2,000, you get a fixed investment of $2 per unit.

Another accountant keeping records on a similar firm might have a depreciation rate of 2%. Two percent on a $50,000 investment is $1,000 annually. If the second firm had the same number of units as the first firm, the fixed costs carried on its books would be one half of the first firm's, or $1 per unit.

It is important to balance fixed costs in such a way as to perpetuate the business through the next 10, 15, 25 or 50 years. If enough revenue can be received and set aside to cover the depreciation of the old facilities, capital will be available in the firm to build and provide the type of new facilities needed to serve the community.

One can have low fixed unit costs in a small, medium, or large firm, depending upon the number of units and the relationship to the type of facility and the capacity or level of operation.

The same can be said about machinery. It is important to operate machinery as near to capacity as practical in order to spread its use over as many units of production as possible before obsolescence.

Reducing Fixed Costs

The main point I want to make clear on fixed costs is the reality of their existence in the long-run. If a realistic depreciation rate is used, there is only one way to decrease unit fixed cost and that is by increasing the volume moving through given facilities.

Variable costs are different. They generally increase as the volume of business increases. It is true that certain variable costs are needed just to open the door. In other words, somebody must open and prepare the mill for business in the morning. But overall, no matter how records are kept, variable costs will increase with volume. This was definitely true with the 100 firms we studied in Ohio.

Labor costs in these firms made up 56% of their total operating costs. Although this variable cost increases as sales increase, it tends to go down per dollar of sale as sales increase, up to a point. With feed mills and elevators in Ohio, this volume of sales is approximately $700,000. After this volume, little economy of scale was noticed, particularly with labor cost per dollar of sales.

Since labor costs accounted for an average of 56% of total costs of the firm, one would expect low labor cost to be associated with high profit. This was not true. Little or no association between labor cost per dollar of sales and net profit per dollar of sales was indicated by the analysis.

There was visual evidence to support the fact that increased sales could be expected with each additional unit of labor. Labor inputs are lumpy in that units of one man must be purchased. The labor force of the firms studied ranged from 2 to 20 people, thus one man is a sizeable part of the labor expense.

When one man is added, a corresponding large lump of sales must be realized to compensate for this cost to the firm. It appeared that those firms using labor for specialized services at near 100% capacity were the most profitable firms. This factor is purely determined by management.

Wage Relationship

As sales volume of the firm increased, the general wage level of the employees in the firms increased. It was found that the wages paid per man did not explain variations in net profit per dollar of sales. An analysis of the salary scale of management and its relationship with the firm's profits showed very little correlation either.

Although no significant relationships existed between net profit per dollar of sales and the wages per man and the management salary, we should not conclude that low wage policies are sound.

It is considered good business to have employee stability from the standpoint of customer relations and training costs. Frequent changes in management and key personnel are particularly wasteful because of the time required for a new manager to become acquainted with the customers and the firm's operations.

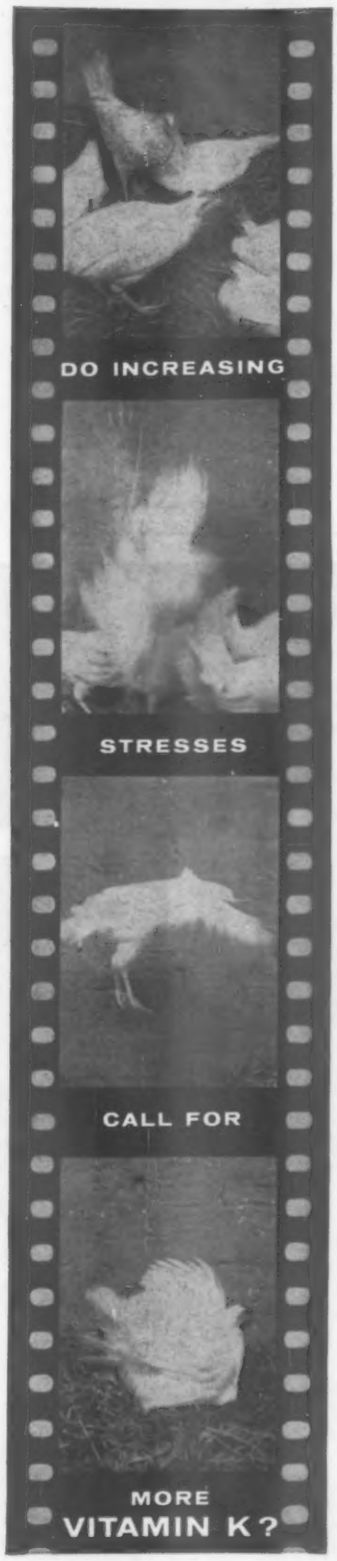
Another significant cost item for most of the feed firms in the state is repairs and maintenance. This cost is usually directly proportional to the sales volume moving through the facility. Generally, new facilities require less upkeep and will show lower repair and maintenance costs.

The amount of repairs and maintenance will be high if a large number of pieces of machinery and equipment operating in the firm are completely depreciated. It is at this point that these costs become variable; actually, fixed investment is being replaced a little at a time with the cost showing in the financial statement as repairs and maintenance. Again repairs and maintenance will usually be a little higher when machinery is being operated at near 100% of capacity.

If I know that the management and the employees are competent, I am not alarmed to see a high cost since it often is the key which shows the firm's operation is at near capacity.

Heat, light, water, and power are a large cost item in most feed and elevator firms. If a mill is planned with the proper machinery and equipment, the power cost will be in direct proportion to the volume of business.

Telephone and telegraph cost is another indication of the activity and efficiency of management in finding the right market. For single station operations, where there is no interphone cost between branches, it was found that as phone cost increased, profit per dollar of sales increased. Of course, one must operate this theory



Continuing research indicates that as the stresses of disease, medication and handling increase, so does the need for vitamin K. When you have a vitamin K need (or problem), ask for . . .

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within the limits of the actual phone costs of the sample.

Truck expense was an item in the accounts that was difficult to analyze because of wide variation in the delivery services of the firms in the sample.

When complete trucking records were available, showing income as well as expense, it was found that the firms with higher trucking income, regardless of trucking expense, had a higher profit per dollar of sales than those with low trucking income.

High Net Profit

Statistical evidence shows that many times, firms with higher expense items will show higher net profit per dollar of sales. A prime example of an item for which this does not prevail is that of interest expense on operating capital. Since this interest is paid on operating capital, it will be associated with accounts receivable. Where neglect in the accounts receivable is evident, this will result in longer aging of accounts, thus increasing the cost. If this is borrowed capital, higher interest expense will show on the statement. Generally, the firms having higher interest expense had lower profit per dollar of sales. This is one item that can be directly affected by the policy of the firm.

If you move through the list of expenses normally associated with most financial statements, you will find that I have offered little help as to how you can increase profits by cutting expenses. In most cases, I do not recommend slicing expenses here and there as you would normally expect.

It is true that in certain isolated instances you might be able to get a man to work for 5¢ an hour cheaper than your competition, but only in the short run. In more cases, labor productivity might be greater with a scale of 10¢ per hour higher than your competitor's. All of you pay the competing rate for light and power; it is considered a standard item. Gasoline prices are the same. Most of you pay the same for a new truck. This is also true for supplies and repairs, advertising rates, insurance rates, taxes, telephone, and most of the other variable cost items. You will find prices uniform throughout the industry.

Far more significant to the profitability of the firm are the income items which are neglected in the record-keeping of most firms. All firms in our sample maintained adequate records of expenses, but very few firms kept records on income that were adequate to give management the guides they needed to operate their firms.

Most of the feed manufacturing firms distribute feed of the same brand over a large area. As a result of the franchise arrangement, they will have outlets or local feed mills every 5, 8, 10 or 12 miles, depending on their policy.

Two firms in the same locality will be handling the same brand of feed and will have practically the same prices. The feed will be priced on the same schedule of prices per ton, thus the gross margin will be the same. Competition dictates this.

It is the same with grain. Competition sets the margin for these products. There is very little the firm can do to change this situation unless it differentiates its product through service.

"Other Operating Income"

"Well, where then," you might ask, "is the key or practice that management should observe in operating a firm to plan for profits year after year?" We think that, as a result of our research at the Ohio Agricultural Experiment Station, the key to success of the local feed firms in Ohio rests on how well or effectively the firm is able to use its labor to provide "other operating income."

"Other operating income" is income derived from services you perform, some of which are grinding, mixing, seed cleaning, hauling, miscellaneous dividends, discounts, cattle spraying services, drying, fertilizer delivery, interest received from accounts receivable, etc.

We added these items of operating income obtained from the 100 firms and correlated them with their profits per dollar of sales, we found a high degree of relationship between the two figures. In other words, a firm with a high rate of "other operating income" will have a high rate of profit.

We continually try to impress upon the grain and feed firms throughout Ohio that the only justification for opening their doors each morning is the services they offer to the farmer.

A feed mill or elevator is a service organization and the type of service offered is dictated by the farmer feeder. It is important for the management and ownership of these service organizations to realize that these services are costly and that revenue must be received from each of these services in order to continue operations.

Feed mills and elevators have a historical reputation of providing services free to the farmer while attempting to recover the cost of the service from other sources.

A recent example of this type of service of local elevators and feed mills throughout the Midwest was the operation of the grain and feed bank. This service was originated by the farmers primarily because they found that the local elevator, with its larger amount of space, could store grain cheaper.

Some feed firms throughout our area provided this storage for the farmer free of charge. Yet, the farmers realize it is costly to provide this service, and they soon question the source of the revenue to cover this cost. They may become uneasy and doubtful as to the prices of other products offered by the firm. Farmers generally gain confidence in the firm when the services are paid for directly.

Services Vary

It is true that these services vary in cost from firm to firm, depending upon the size of operation and the type of service needed in a community. Many feed mills in Ohio are grinding feed today for 10¢ a hundred pounds.

No firm in the sample studied could cover operational cost alone at the revenue of 10¢ cwt. for grinding and mixing. If the feed mill could be operated continuously through an eight-hour period and feed could be handled in bulk, the firm might cover operational costs, but very few firms are fortunate enough to be able to have this type of operation. The average firm with 50% of its feed distributed by bulk will have grinding and mixing costs of approximately 18½¢ cwt. However, grinding and mixing costs of up to 40¢ cwt. were found in some of the firms studied.

To further analyze some of the factors common to successful feed and elevator firms, 44 of the Ohio elevators and feed mills were selected for further study. Twenty-two of the firms were the most successful and 22 were the least successful of the firms studied in the larger sample.

The successful operations were defined as those realizing the highest reported profit per dollar of sales. The low-profit firms were those realizing the lowest reported profit per dollar of sales.

It is interesting to note that both the high-profit and low-profit firms buy their merchandise from approximately the same group of suppliers and in approximately the same quantities. Both groups sold grain through the same wholesale buyers. Both groups indicated the same reasons for using these markets.

One big difference in their buying habits resulted from the fact that the high-profit firms received more cash discounts than their less successful competitors. This being true, we would assume that the high-profit firms buy their goods at slightly lower

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prices due to this cash discount. It was found that the high-profit group used slightly higher mark-ups than the low-profit group. They also carried a larger gross margin on the grain that was bought and sold.

The 22 more successful elevators and feed firms received a larger share of their income from the sale of services. The number of particular services offered by each group, both low- and high-profit, was about the same. The difference was in the magnitude of the services and the efficiency with which they were offered.

One would assume that the high-profit firms must excel in the quality of services performed in order to sell more of these services to the farmer.

More Minor Services

The high-profit firms offered more minor services for which no revenue was collected, such as market information, farm management advice, and other services by the manager in helping his customers out of personal problems and assisting them in their financial and operational structure.

If there is a cost involved in these services, even the high-profit operations covered these out of gross margins.

Contrary to recommended procedure, the high-profit group of elevators carried larger inventories, had slower moving inventories, and held more of their inventory over six months.

It would be reasonable to assume that the less successful group of elevators was carrying less than optimum inventory or their cost of inventories was not sufficient to offer the needed services. We would say this is due to faulty management in a sense.

Findings mentioned earlier, concerning wages and salaries, also held true for the 22 high-profit elevators. They paid from 5 to 10% higher wages in every job classification than did the low-profit elevators.

One would assume that the successful elevators were utilizing a higher quality of labor in their operations and it paid off handsomely. Actually, the higher quality of labor was recognized by the manager of the profitable firms, since the successful managers rated their own employees higher than did the managers of the low-profit group.

One of the more popular conceptions of proper personnel management is the value of a job description for each employee. In no case did we find a firm using job descriptions, yet there were firms receiving profits of 15-20% on their invested capital.

From the accounting point of view, the low-profit firms had higher asset turnover, faster inventory turnover, lower costs per dollar of sales, and lower accounts receivable than the successful group.

Thus, according to some of our more popularly accepted business ratios, this low-profit group should have been more successful than the high-profit group.

This would, of course, assume that everything else was equal. However, this was not true. Gross operating margins were not the same and "other operating income" was not the same, which evidently was the key to some of the factors that gave the 22 successful operators their higher profits.

There seemed to be a direct relationship between costs and profits of the 44 firms. The low-profit firms apparently were not investing optimum amounts of capital in buildings, inventories, and/or labor to maximize net profits. This was also true with accounts receivable.

We must approach the accounts receivable investment, for a particular firm, in a different way from that in which we would approach the investment in capital facilities.

Within a given trade territory for a feed firm, we can obtain, without any particular pressure sales techniques, a given volume—let's say $50,000 worth of feed, by just opening the doors and offering a competitive feed service. Of this first $50,000 worth of feed, we might expect 60% to be carried on the books for over 30 days. Only 5-8% would be carried on the books longer than six months.

Sales Program

If we initiated a pressure sales program to increase feed sales another $100,000 to a total of $150,000, the additional $100,000 in sales would be carried on the books for over a period of 30 days, and approximately 30% of the $100,000 would be carried for periods of longer than six months.

This is due to the encouragement on the part of the feed firms for the farmers in the area to increase their operations beyond the extent of the available capital.

Thus, they transfer this cost of obtaining capital to the feed firm. Unless the feed firm can transfer this capital cost to the feed supplier or to some other organization, feed margins for this additional $100,000 of feed must, out of necessity, be higher than the margins for the original $50,000 of feed sales.

This point illustrates the fact that accounts receivable are actually costs, and the cost of the borrowed capital must be borne by the farmer either through margins or a direct interest charge.

To summarize, I am convinced that equitable charges must be made by the feed firm to perform all services. Farmers respect a business man when he clearly outlines the changes that are necessary to perform services for them.

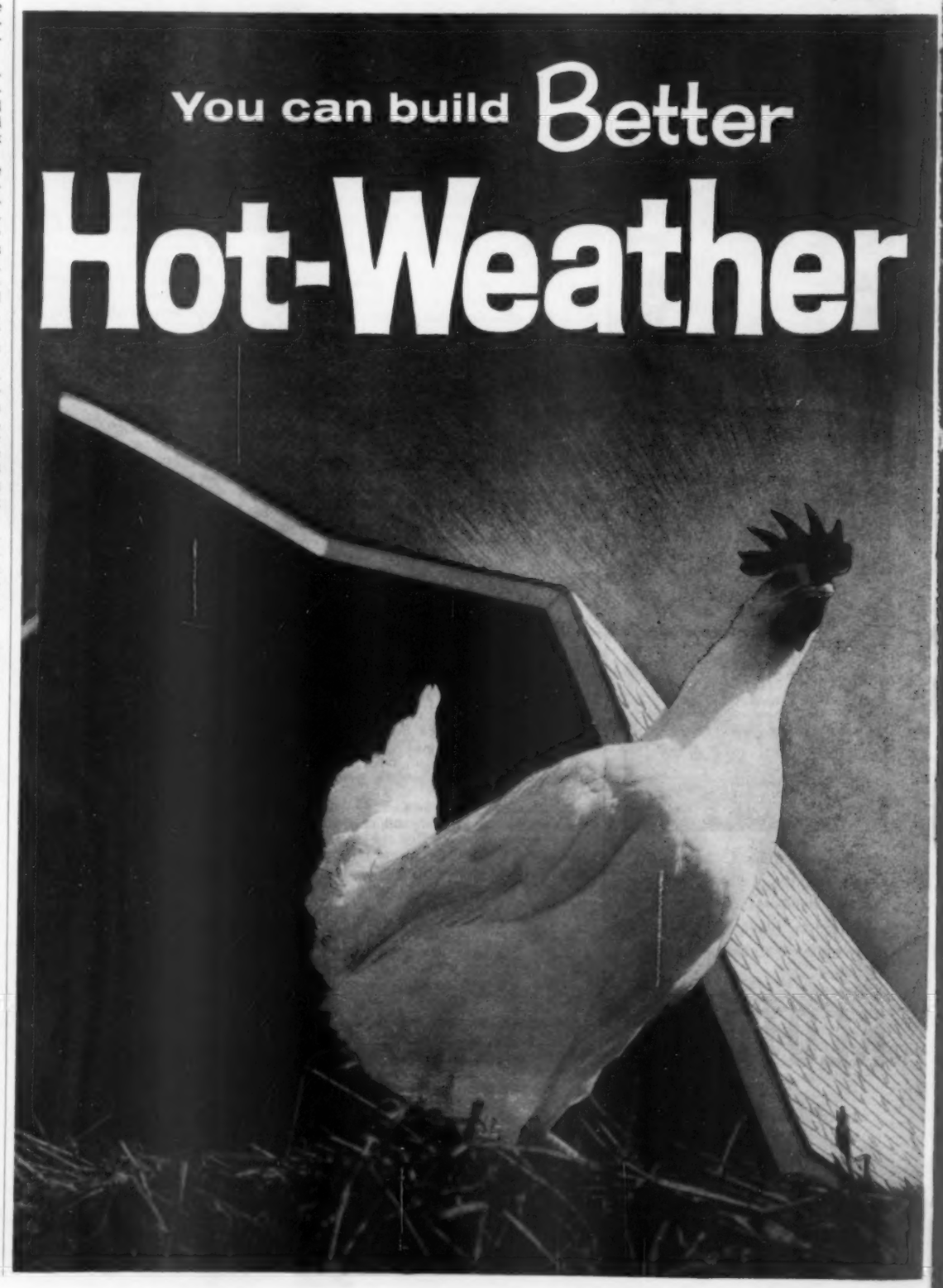
The farmer's major requirement of the feed firm is that the services are performed well, efficiently, and promptly.

It is evident after detailed study of many low-profit feed and elevator firms in Ohio that the profit margin difficulty is not on the cost side of the ledger. Collectively, throughout the sample of 100 elevators, the low-profit firms are doing a better job of controlling operational costs than their more successful competitors.

In fact, the low-profit firms could probably invest more in buildings and inventories and spend more money in improving the quality of their labor force than they do. It appears that, particularly in Ohio, feed firms are less price competitive than is generally assumed by the trade. Competition between feed firms in the state is apparently in the form of service rather than price.

It is increasingly important, however, for the feed and elevator firms to provide an improved and adequate method of bookkeeping and auditing procedures. Specifically, they should know where their income originates and how much comes from each of the services performed. You cannot analyze the cost of doing services unless you can compare the returns from each specific service. It is almost impossible with the records that most elevators keep, even on a cost basis, to determine the unit costs of providing each of the individual services the elevator performs.

A few dollars spent on improving



the financial control of a business will often prove to be the key to locating troubled spots in the operation.

The feed firms that will survive the rapidly changing agricultural economy under which they will be living in the next decade, will be those firms which can solve these major problems. The manager's ability to forecast the changes in agriculture, and to adjust his business accordingly, will determine the success or failure of his particular business enterprise.

ELEVATOR COLLAPSES

MANSFIELD, OHIO—A grain elevator here collapsed recently spilling debris over a wide area and disrupting train traffic on nearby tracks. The freak mishap is believed to have been caused by a defective sprinkler system which filled the elevator with water and swelled the grain. Jerry O. Hanley, owner of Honegger-Hanley Mill, Inc., estimated $100,000 damage for grain and $120,000 for the elevator.

Salsbury Fellowship To Michigan Student

MT. MORRIS, ILL.—The National Turkey Federation has announced that Elwood W. Speckmann, Jr., a graduate student at Michigan State University, has been awarded the seventh annual Dr. Salsbury Graduate Fellowship.

The fellowship, consisting of $1,500, is awarded annually to "the most outstanding graduate student in a field of study relating to turkey disease problems." The funds to support the fellowship are provided by Dr. Salsbury's Laboratories, Charles City, Iowa, for the purpose of encouraging outstanding young people to carry on graduate work in this field and to make it possible for them to complete their educational work more rapidly and to further the development of research and knowledge related to turkey diseases.

Mr. Speckmann's undergraduate work was completed at Rutgers University, New Brunswick, N.J., where he obtained his degree in poultry husbandry in 1957. He immediately started his graduate work in avian physiology and biochemistry at Michigan State University.

The title of the research project being conducted by Mr. Speckmann is "Attempts to Determine the Causative Mechanisms of Aortic Rupture in Broad Breasted Bronze Turkeys."

This work will be conducted under the immediate direction of Dr. Robert K. Ringer, who has worked in research in connection with the problem of aortic rupture in growing turkeys.

The recipient of the Dr. Salsbury's Research Fellowship is determined by a special committee consisting of: H. H. Alp, American Farm Bureau Federation, Chicago; Dr. B. S. Pomeroy, University of Minnesota; Dr. J. Holmes Martin, Purdue University, and Dr. Cliff D. Carpenter, Laguna Beach, Cal.

Prater Salesmen Hold Seminar in Chicago

CHICAGO — Twenty-one Prater representatives from 11 states recently held a two-day business session of serious commentary, training and thinking, along with some relaxation.

George F. Thomas, Prater president, keynoted with a message on "Trends in the Feed Business." Bill Earl, sales manager, outlined the sales and promotional program for the balance of 1960, stressing the company's selling tools, engineering services, field research and feed mill planning programs.

One evening, the entire Prater contingent saw the Chicago White Sox Cleveland Indian game. Early the next morning, Robert Prater, vice president, and Elmer Hase, assistant sales manager, introduced two important Prater additions: A 4-ton twin-spiral mixer and a new high speed hay and grain mill. Actual in-work demonstrations in the Prater plant highlighted this part of the program. This demonstration was followed by a 2½ hour idea session in which all representatives participated.

Despite the heavy program plus a featured discussion and sales analysis of the Prater pre-engineered packaged plant, there was still time for a golf outing at the Hinsdale Midwest Country Club. Howard Baumann, Prater Central Illinois representative, had low score, and Roland Nelson, northern Illinois, took low score with handicap.

This busy day was topped off with a visit to the Melody Top Playhouse to view "Silk Stockings."

The best fish story of the meeting was credited to Harold Attebery, Ohio representative, and Stretch Ebinger, also of Ohio. Mr. Attebery, winner of the President's Selling Bee Canadian Fishing Trip, told how he hooked the prize winning 16 lb. northern, while Mr. Ebinger showed slides of the trip.

The sales seminar was held at the Oak Park Arms Hotel and Prater representatives from the following states attended: Illinois, Indiana, Wisconsin, Michigan, Iowa, Kentucky, Ohio, Minnesota, Missouri, North Dakota and South Dakota.

Construct New Storage

BRUNDIDGE, ALA. — Bob's Feed Mills, Inc., in Brundidge, formerly the Brundidge Milling Co., Inc., has announced the construction of new bulk storage facilities.

Four new bins, with a total capacity of 200 tons, are under construction now, according to Merlin T. Bryant, secretary-treasurer.

The company, with about 25,000 hens on contract, also has announced the construction of a new egg processing and handling plant. All eggs will be processed, packed and distributed under a new "complete package" program.

Egg Feeds!

When it's sweltering hot in the henhouse, Arsanilic Acid boosts egg production... feed efficiency... customer satisfaction

For 40¢ or less per ton, you can build into your summer laying feeds more of the results that lead to more customer satisfaction . . . and more repeat sales all season long.

In three hot-weather tests, at the USDA Southwest Poultry Experiment Station, adding 90 Gm of Arsanilic Acid to the basal ration produced 75 dozen more eggs per ton of feed. The pounds of feed per dozen eggs dropped from 4.62 to 3.93. (Poultry Science, July, 1959) Even at the low price of 25¢ a dozen, that's a return of $18.75 on a 40¢ investment!

But just as important—most feed manufacturers now using Arsanilic Acid in their egg feeds are doing so because it provides year-around performance insurance at low cost. That goes for every egg feed you sell—whether mixed in your own mill...at the feed dealer's...or on the farm.

For full details on the extra performance insurance that Arsanilic Acid can give you on a year-around basis . . . see your Abbott man.

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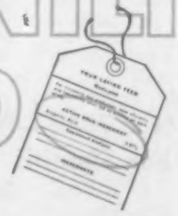

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No. 7075—New UGF Source

Development of a new improved source of unidentified growth factors to bolster livestock and poultry rations has been reported by the agricultural division of Chas. Pfizer & Co., Inc. The new product—known as Vigofac-6 — incorporates "the same uniform and dependable qualities of the former UGF source into a new, freer-flowing, non-dusting formulation that out-performs regular Vigofac," the firm reports. The cost-cutting flexibility of the new UGF source will provide advantages in the formulation of livestock or poultry feeds, according to J. J. Thompson, vice president of Pfizer and general manager of its agricultural division. Six pounds of Vigofac-6 will supply all the requirements needed in a ton of broiler feed and the new non-caking formulation has no offensive odor and requires no special storage or handling facilities, he adds. For more information, check No. 7075 on the coupon and mail.

No. 7069—Chain Poultry Feeder

A new automatic chain poultry feeder driven by sprockets that do not operate in the feed has been announced by Jamesway. This means minimum grinding and pulverizing of feed, according to Paul Benbow, sales manager of the poultry equipment and incubator lines of the James Mfg. Co. Positive drive, he says, is supplied by the 180-degree wrap-around contact of the chain with the

drive sprocket that turns above and out of the moving feed. Designed for all types of poultry installations, the feeder can be quickly dismantled and reassembled, he adds. Mr. Benbow states that the key features of the new Jamesway feeder are its non-clog corners, dual leg stand, feed cleaning device and positive feed flow. The drive mechanism is easy to get at for proper servicing. For more information and a free folder illustrating the new feeder, check No. 7069 on the coupon and mail.

No. 7074—Self-Unloading Feed Body

Faster unloading and easier operation are promised by Baughman Mfg. Co. with the use of its Bulk Feed Body SF-6, according to literature now available from the firm. Horizontal and vertical augers transport the bulk feed to a discharge stack 15 ft. above ground level. The discharge stack has an auger that can move the feed to even greater heights. All augers are hydraulically operated and the entire unloading operation can be controlled from one central point. For complete information, check No. 7074 on the coupon and mail.

No. 7073—Antibiotic Bulletin

Abbott Laboratories has just published a new 12-page bulletin containing complete information about Gallimycin-10 for low-level growth stimulation in broiler rations and breeder feeds. Technical Bulletin No. 560 describes the composition, packaging, uses and proved effectiveness of this antibiotic as a non-medicated feed ad-

ditive, the company says. Full details and results of studies at agricultural colleges and experiment stations, plus numerous field tests in leading poultry areas of the U.S. take up a large portion of the text. A bibliography substantiates the research data. Copies of the bulletin may be obtained by checking No. 7073 on the coupon and mailing.

No. 7070—Steel Cable Socket

The usual loose, ragged and dangerous end sticking out of the clamp holding a steel cable to a power shovel, used in unloading grain and bulk ingredient cars, is eliminated by a new device marketed by the Brooks Machine & Mfg. Co., the firm says. The Brooks cable socket completely hides the cable end and shields it from catching on walls, doors or the hands and legs of the shovel operator. The socket also provides a more secure grip on the cable, minimizing cable slippage. No special tools or knowledge is needed to install the device, the manufacturer says, and "it takes no longer to hook up than the old style cable clamp." For details, check No. 7070 on the coupon and mail.

No. 7068—Treatment For Sinusitis

A sinusitis treatment, which is named "nf-180 Turkey Formula," has been added to the animal health products line of Hess & Clark, Inc. The treatment is injected directly into the infected sinus where it coats and adheres to the cavity wall. There is no need to drain the infected sinuses before treatment, the company says. Furazolidone is the germ-starving

chemical used in nf-180. The product adheres to the infected sinus area for as long as nine days, the company says, and it heals the infected sinus membrane, aids drainage and helps check further sinusitis. It is available in a 250 cc. bottle. For more information, check No. 7068 on the coupon and mail.

No. 7076—Moisture Tester Check

A new, fast and simple method of accurately checking Steinlite Moisture Testers in the field has been announced by Seedburo Equipment Co., exclusive distributor of Steinlites. The new development is designed to permit Steinlite owners to almost immediately determine the condition of their testers. The new method provides a much more satisfactory test medium than grain samples, company officials report. The material will be shaped into pellets and manufactured under the name of Steinlite Test Pellets. Accurate meter readings can be obtained from low to high moisture range, they say. The pellets can be used on the following Steinlite models: Type 105-S and D units, the 400-G and the new 500-RC. For details, check No. 7076 on coupon and mail.

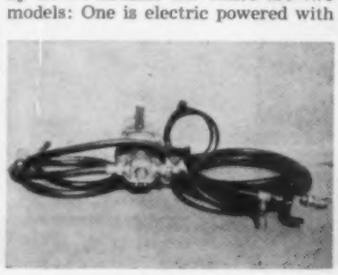
No. 7067—Three Section Probe

Burrows Equipment Co. announces a three-section probe designed for sampling boxcars. The probe is designed for use in limited working space where there is little or no head room, the company says. The main

section is first inserted into the grain, the handle is removed and the extra extension is screwed onto the main section making an overall length of 96 in. For more information, check No. 7067 on the coupon and mail.

No. 7072—Portable Sprayer

Two portable grain fumigation sprayers for use in grain terminal and port elevators have been announced by O. W. Kromer Co. There are two models: One is electric powered with



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- ☐ No. 7069—Chain Poultry Feeder
- ☐ No. 7070—Steel Cable Socket
- ☐ No. 7071—New Bulk Body Model
- ☐ No. 7072—Portable Sprayer
- ☐ No. 7073—Antibiotic Bulletin
- ☐ No. 7074—Self-Unloading Feed Body
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a ½ h.p. single phase 115 V motor; the other is gasoline engine driven with a 1¾ h.p. 4 cycle engine. The complete unit includes a deluxe trigger shutoff hand gun with a heavy duty adjustable broad cone nozzle for spraying walls and ceilings. It also is equipped with a wide angle fan type nozzle for spraying grain in augers, conveyors, belts and chutes. Kromer features built into these sprayers include the "Stedi-Flow" pressure regulator which is a spring operated hand control. The bronze roller pump has a stainless steel shaft, leather seals and nylon rollers. It also is available in cast iron. The pump is coupled directly to the motor. For more details, check No. 7072 on the coupon and mail.

No. 7077—Power Shovel Hook

Brooks Machine & Mfg. Co. has a new folder on a special steel hook for use on power shovels for unloading grain and bulk ingredient cars. The device protects against breakage and accidents, the manufacturer says, in that it minimizes the possibility of the board being snapped out of the operator's hands when it catches on obstacles. There is a strong spring in the device to provide flexibility and resilience in the connection between the power cable and the shovel. A 2½-in. back washer places pressure over a large area to protect the board. The cable cannot catch on the hook which is protected by a shield. The chain cannot unhook. The hook is

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Build today's most modern feed mill with Butler square tanks... Butler square tanks handle grain, feed ingredients, and feeds with ease. The new square shape provides maximum storage space in a minimum of ground space. All-steel construction reduces insurance rates and maintenance costs. 100% bolted construction speeds erection, eliminates slow, costly welding. Contact your Butler Tank Contractor today for full details. Or write direct.

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Dept. 402, P. O. Box 7027, 1020 East 63rd Street, Kansas City 13, Mo.
Mfrs. of Equipment for Farming, Transportation, Bulk Storage, Outdoor Advertising • Metal Buildings • Plastic Panels • Contract Manufacturing
Factories at Kansas City, Missouri • Minneapolis, Minnesota • Galesburg, Illinois • Richmond, California • Birmingham, Alabama • Houston, Texas • Burlington, Ontario, Canada

made of steel for strength and the shield of aluminum for lightness. For details, check No. 7077 on the coupon and mail.

No. 7071—New Bulk Body Model

Winger Manufacturing Co. has added a new model, the "BBF-H", to its line of Bulkmaster bulk feed bodies, according to George Ford, sales manager. The Model BBF-H is powered by a full size hydraulic system of standard manufacture. Equipped with a 6-in. screw conveyor in the bottom of the body, a 9-in. vertical auger and a 6-in. discharge auger as standard, a 9 in.-12 in.-9 in. auger system is offered as an option. Discharge augers vary in length depending upon body length, but in no case are less than 14 in. long. The new model is standard with 54-in. sides with higher sides available if needed. Automatic devices to turn,

raise and lower the discharge are offered at extra cost. For more information, check No. 7071 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7020—Pig holding unit, Caswell Manufacturing Co.

No. 7021—Feed weighing, Scales, Inc.

No. 7022—Bag, bulk unit, Sudenga Industries, Inc.

No. 7023—Jackknife premium, Chas. Pfizer & Co., Inc.

No. 7024—Mobile management program, Barnard & Leas Manufacturing Co., Inc.

No. 7025—Sampling probe, Seedburo Equipment Co.

No. 7026—Van tank, Transicold Corp.

No. 7027—Bulk material handler, Finco, Inc.

No. 7028—Automatic calf feeder, K & K Manufacturing Co.

No. 7029—Poultry health calendar, Dr. Salsbury's Laboratories.

No. 7030—Moisture recorder, Burrows Equipment Co.

No. 7031—Coding, marking unit, Thomas Engineering Co.

No. 7032—Expanded line, Cleveland Vibrator Co.

No. 7033—Premix program booklet, Thompson-Hayward Chemical Co.

No. 7034—Fall promotion, Agricultural Division of Chas. Pfizer & Co., Inc.

No. 7035—A and D fortifier, Peter Hand Foundation.

No. 7036—Automatic proportioner, Vineland Poultry Laboratories, Inc.

No. 7037—Protein meter, Mogler Farm Industries, Inc.

No. 7038—Vitamin K for blood spots, Heterochemical Corp.

No. 7039—Chicken, turkey wormer, Specifide, Inc.

No. 7040—General bulletin, B-I-F Industries.

No. 7041—Portable power unit, Big Dutchman Automatic Poultry Feeder Co.

No. 7042—Feed mill bulletin, Seco, Inc.

No. 7043—Dairy premix, Specifide, Inc.

No. 7044—Fat handling unit, Thompson-Gill, Inc.

No. 7045—Bag, bulk body, New Way Manufacturing Co.

No. 7046—Cattle self feeder, Brower Manufacturing Co.

No. 7047—Mixing salt, The Morton Salt Co.

No. 7049—Sewing attachment, Bemis Bro. Bag Co.

No. 7050—"Eggtober" program, Chas. Pfizer & Co., Inc.

No. 7051—Low-level antibiotic clearance, Abbott Laboratories.

No. 7052—Bulk feed bodies, Simonsen Manufacturing Co.

No. 7055—Feed pelletizing binder, Consolidated Water Power & Paper Co.

No. 7056—Standard utility building, Behlen Manufacturing Co.

No. 7057—Swine management materials, SIU Foundation.

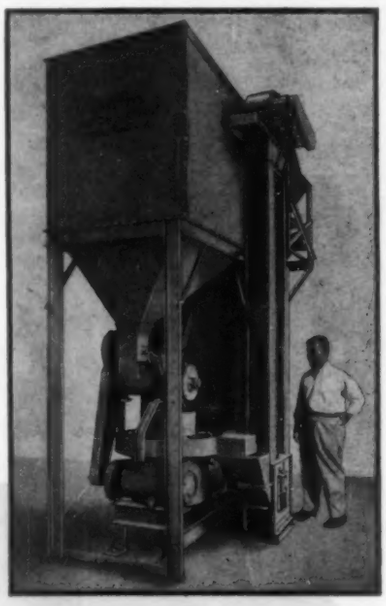
No. 7058—Feeder, rotary valve bulletin, Fuller Co.

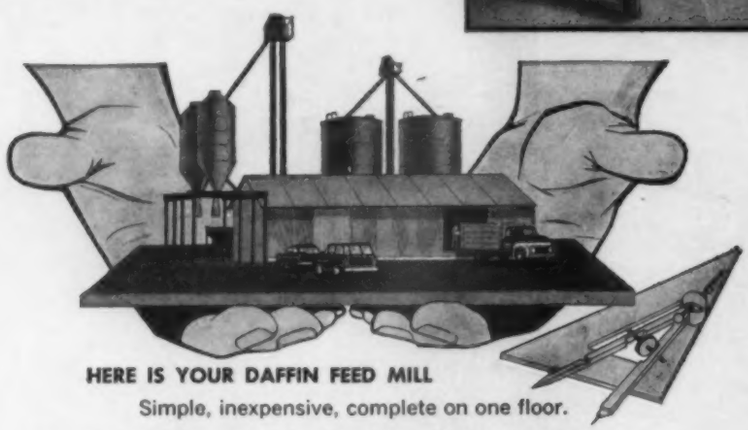
No. 7059—Face fly repellent, Myzon Laboratories.

Your new Daffin Feed Mill includes a

CUSTOM PACKAGED PELLETING UNIT

Everything you need, economically packaged, profit engineered to produce top quality, low cost pellets: SURGE BIN, PELLET MACHINE, ELEVATORS, SCALPER, COOLER . . . all in 50 sq. ft. of floor space on one floor, and only 13'6" high!





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Simple, inexpensive, complete on one floor.

A pre-engineered, pre-fabricated Mill adapted for production, custom processing, grain bank operation, bulk delivery. It contains the industry's first and finest Packaged Feed Grinding-Mixing and Molasses Blending Unit; The Pelleting Unit; and the Daffinaire Materials Handling System; other accessories of your choice. You're completely equipped for low cost formula feed production FROM ONE SOURCE.

Daffin FEED MILLS

Daffin has the plan to make you higher profits through feed processing at the lowest possible cost-per-ton. Your local Daffin Contractor-Representative is ready to advise you. Phone, wire, write today . . . no obligation.

Builders of the World-Famous Daffin Feedmobiles, Packaged Feed Plants, Pneumatic Conveying Systems, Pelleting Machines, Batch Mixers

SERVICE PARTS DEPOTS: Alabama-Birmingham-Montgomery • Arkansas-North Little Rock • Georgia-Perry • Idaho-Twin Falls • Illinois-Springfield • Indiana-Evansville-Indianapolis • Iowa-Cedar Rapids • Kansas-North Kansas City • Kentucky-Shelbyville • Michigan-Detroit-Grand Rapids • Minnesota-Rochester • Nebraska-Omaha • New York-Syracuse-Tonawanda • North Carolina-Laurinburg • Ohio-Cincinnati-Cleveland-Dayton-Toledo-Youngstown • Pennsylvania-Lancaster-Wexford • South Carolina-Laurinburg S. Dakota-Sioux Falls • Tennessee-Knoxville-Memphis • Texas-Dallas-Houston-San Antonio • Virginia-Lynchburg • Wisconsin-Oconomowoc • Canada-Edmonton, Alta.-Toronto, Ont.

DAFFIN MANUFACTURING COMPANY, 3265 NORTH PRINCE STREET, LANCASTER, PENNSYLVANIA
DIVISION OF DAFFIN CORPORATION

Dannen Mills Explains Western Division Plans

ST. JOSEPH, MO.—The establishment of a western division of Dannen Mills and the appointment of James B. Gammon as vice president of the division with headquarters at Denver, Colo., has been announced by Dwight L. Dannen, president of the firm.

J. B. Gammon

Mr. Gammon, a vice president of the Denver U.S. Bank, has been with that institution since 1953 and has been a vice president since 1957.

The new division will have its office in the Dannen warehouse in Denver and will include that warehouse, the firm's mill at Milliken, Colo., and the Dannen feed lot at Milliken.

"The Colorado population is booming and this means big requirements for food, resulting in a big market for feedstuffs. Our directors felt we should intensify our activities in this growing market," Mr. Dannen said as he announced the new division.

Mr. Gammon, a graduate of Colorado State University, was a field man with the Colorado Farm Bureau before joining the Denver bank. He is a director of the Denver Agricultural and Livestock Club and chairman of the agricultural committee of the Colorado Chamber of Commerce. He is a member of the Colorado State University livestock technological Society and of the Mile High Cattlemen's Assn.

Mr. Dannen said James L. Larson will continue as the firm's sales manager in the western district, reporting to the St. Joseph general sales office.

Mr. Beard and sons, D. T., Jr., and Marvin, plan to install bulk delivery of Purina Chows.

"Our Purina Service Center helped change agriculture for the better"

—says D. T. Beard, Sr., Beard's Feed Store, Laurel, Mississippi

Farmers around Laurel are counting more money because of new developments in agriculture. Much of this progress came from farm practices introduced by the Service Center with the Checkerboard sign. Every new idea that offered better farm living was supported actively by Beard's.

Beard's Feed Store introduced broiler growing, farrowing units and the "Pig Parlor" method of pork production to the Laurel area. The firm helped improve the quality both of dairy and beef cattle herds and introduced creep feeding of cattle, hogs and sheep. Mr. Beard promoted the town's produce shipping shed as a community effort.

Service is the No. 1 sales tool at Beard's. The Service Center's 30 per cent increase in business last year is a measure of Laurel farmers' appreciation of fine service.

* * * *

"Purina Salesman J. E. Ruffin has been a big help to us," says Mr. Beard. "He helps us hold group meetings of farmers, conducts employee training sessions and makes regular weekly trips to help sell new customers. Farm folks depend upon him for the right answers to their feeding and management problems."

Jack Walters, one of Beard's two Purina-trained sales and service men, advises George U. Mayfield, Jr., on the operation of his farrowing unit and "Pig Parlors."

Purina's method of dealer inventory control is practiced by Jarrell Pickering, foreman of Beard's warehouse.

The Purina accounting system for dealers is followed by Mrs. Mack Young, bookkeeper for Beard's Feed Store.

Two truck drivers, Cleo Morgan and LeRoy Porter, travel regularly scheduled routes to serve farmers.

PURINA...YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

JOE BROOKS

BY AL P. NELSON

The Sales Message Counts

It was a surly Milt Peters who dropped in at the Highway Coffee Shop about 10:30 on Friday night after a sales training meeting at the feed mill.

"Hi, Milt!" smiled white-capped Jack Reynolds, the counterman. "You're late. Your sugar is over there." He lifted his eyebrows and moved his glance to a booth where a far from homely redhead was peering into a compact mirror and applying lipstick.

Milt grunted. "Oh, all right," he said grumpily. "Bring me some coffee, will you?"

"Sure, coffee'll perk you up. You look like you need it."

"Yeah, I'm off the beam," Milt said. "Way off."

He moved to the booth. The redhead lifted mascaraed eyes and surveyed him coolly. "Well," she said critically, "you sure took your time. We're not married, you know."

"Skip it," Milt said. "I'm off beam tonight."

The redhead frowned. "Who is it?" she asked warily. "Another woman?"

"No, my boss."

The redhead took a long drag on her cigarette. There was a red smear on the filter end as she took it from her mouth. "Well, what has Joe Brooks gone and done now?"

Jack Reynolds sauntered forward with coffee in a blue cup and saucer. "Here you are, Milt. Want something to go with it—cheesecake, maybe?" He leered facetiously at the redhead.

"Skip it, Junior," she said. "Milt's got a problem. He's mad at his boss."

Jack Reynolds looked around furtively. "Yeah, well, I get that way once in a while at Ben, too. Especially when he makes me polish napkin container chrome after a hard day. But, that's life."

Milt sipped his coffee and said nothing. The redhead leaned forward and softly pressed the frown creases between Milt's eyes. "Relax, honey," she said. "Relax. I'm here."

Threatens to Quit

"Yeah, I know," Milt said. "But I'm still owlly. I think I'll quit my job."

Jack Reynolds whistled. "Hey, this is serious. Did Joe cut your wages—or ask you to pay for your service uniforms?"

"Nah," Milt said disgustedly. "Nothing like that. But he wants us to wear some silly neckties—like this."

He dug into his pocket and pulled forth a crumpled black necktie and flung it on the plastic topped table. The redhead picked it up, straightened it and draped it over her finger. On the bottom eight inches of the tie was a bit of ad copy done in red thread. It said, "WE LIKE YOU."

"Oh, do you?" asked the redhead, her blue eyes sparkling.

"Some other time," Milt threw in. "We're supposed to wear this necktie for three days, then we change to another. Holy cow, the feed business is getting kiddish. I won't wear it."

"Say," said Jack Reynolds, picking up the tie. "This is keen." He held it up to his neck and looked in the wall mirror. Then he said, "Cheese!" and smiled from ear to ear. "My boss would like this."

"I don't like it," Milt growled. "Makes me feel like a billboard. I—won't have any individuality left, wearing a tie like this."

Jack looked at the redhead. "Listen, cutie, how can you put up with an ornery guy like him? Why don't you swap for a guy like me?"

The redhead dragged again on her cigarette, dug in her purse and pulled out a small blue notebook. Casually she tossed it on the formica. "Sign there, Whitecap. And your phone number, please. Just in case."

Has Other Necktie

"It wouldn't be so bad," Milt went on, absently watching Jack Reynolds eagerly entering his name and phone number. "If Joe would just use one necktie message. But he's got others we are to use like: 'Welcome Customer,' 'Need Anything Else?' '2% Discount' and 'Our Rat Bait Kills!'"

"Gee," said Jack. "Must cost Joe a lot of dough for neckties. He's got 10 or more employees."

"It would save you money for neckties, Lover," suggested the redhead. "You won't have to buy any. Then

Herman Nagel's
Trace Mineral
CONCENTRATE

Where only trace minerals are to be added, Herman Nagel's Trace Mineral Concentrate supplies all eight, in correct balance.

THE HERMAN NAGEL CO.
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In the feed business,

Free booklet reports on 3 types of distribution

As a business man, you naturally want to know more about the economics affecting your business.

Let's say that in your market area, there are three competitive methods of distributing feeds. The bulk system...the burlap-bag-to-bulk...the burlap bag in 50 lb. and 100 lb. sizes.

What are the component parts of the cost for each kind of *delivery* system?

What should filling, weighing, closing and warehousing bags cost? (What about a return bag program?)

What figures can you rely on in building and expanding your business along the most *profitable* lines?

★ ★ ★ ★

THE ANSWERS are all in this free booklet, made available by the Research Committee of the Textile Bag Industry. It's FREE...it's factual...it's the full story...it's furnished on request to

The Burlap Council

you can spend more money on me."

"As I said before, I just don't like to be a walking billboard, for anybody, even Joe," pouted Milt. "I'm gonna start looking for another job."

"As what—cashier in the bank?" Jack filled Milt's coffee cup. "Have another on the house!"

"No, the sight of too much money always gives me a stomach ache. I want a job where I can express myself. That's what's wrong with America today. Everything is too organized. The individual is lost."

"Except at payday," put in Jack. "Man, I love payday. What do you care what you have to do—so long as you get paid?"

Milt frowned. "I'm particular. I have principle. I want a sense of satisfaction from my job."

"Does he get this way often?" Jack asked. "If he does, baby, you're better off with me."

"He gets over it," she said. "I'm his sounding board. He talks himself out after awhile, and then he's real nice."

Jack's eyes widened. "Gosh," he said, "you know a lot about men, don't you?"

The redhead smiled, her eyes sultry. "I get by, Whitecap. I get by."

Milt Peters downed the last of his second cup of coffee. "Well, I'll give this new deal of Joe's a whirl," he said with finality. "I won't be stubborn. And I'll keep an account of all customers' remarks about the sales messages on our neckties. Then I'll type up a report and give it to Joe. He likes sales ideas and maybe he'll give me an extra 10 spot for my initiative. Yep, I'll show him."

The redhead yawned and doused her cigarette in her water glass. "We can just catch the last show at the outdoor, Lover," she cooed. "And there's no moon tonight."

"Good," said Milt rising. "Let's go. I need something to take my mind off business. It's so darn competitive."

Utah Firm Markets New Mill to Process Five Tons Per Hour

SALT LAKE CITY—Utah Machine & Mill Supply Co. here in marketing a new livestock feed mill that processes about five tons of grain an hour.

The machine, with rollers each weighing a ton, is the largest ever produced by the firm. It was developed over the three-year period.

P. R. McIntire, president of the firm, said the company now produces three such mills a month and that "we're so far behind in meeting orders, I'm afraid we'll never catch up."

The feed is introduced into the mill by a hopper. It is partially cooked by live steam. Then it is crushed between the heavy rollers.

The flattened grain, which can be mixed with other types of feed, is more readily digested than in its original state.

Cost of the mill ranges from $3,000 to $3,500. Addition of an electric motor and drive brings total investment to between $7,000 and $8,000, Mr. McIntire explained.

NEW MILL — J. A. (Bud) McIntire, front, and P. R. McIntire inspect cam throw-out linkage on a new mill manufactured at Utah Machine & Mill Supply Co., Salt Lake City. The new livestock feed mill processes about five tons of grain an hour.

One of the machine's innovations is a so-called "micro-grinding control," Mr. McIntire pointed out. This involves a precise control over rolling pressure applied to feed.

The firm, founded 10 years ago, has 12 employes. Mr. McIntire's son, J. A., is vice president. D. M. Queal, a son-in-law, is director.

The company does its business in 11 western states, western Mexico and Canada. It is represented by a force of five salesmen.

Utah Machine & Mill Supply recently concluded an agreement with Turner Manufacturing, Ltd., Ipswich, England, for import of British-made rollers to be used in the new mills, Mr. McIntire stated.

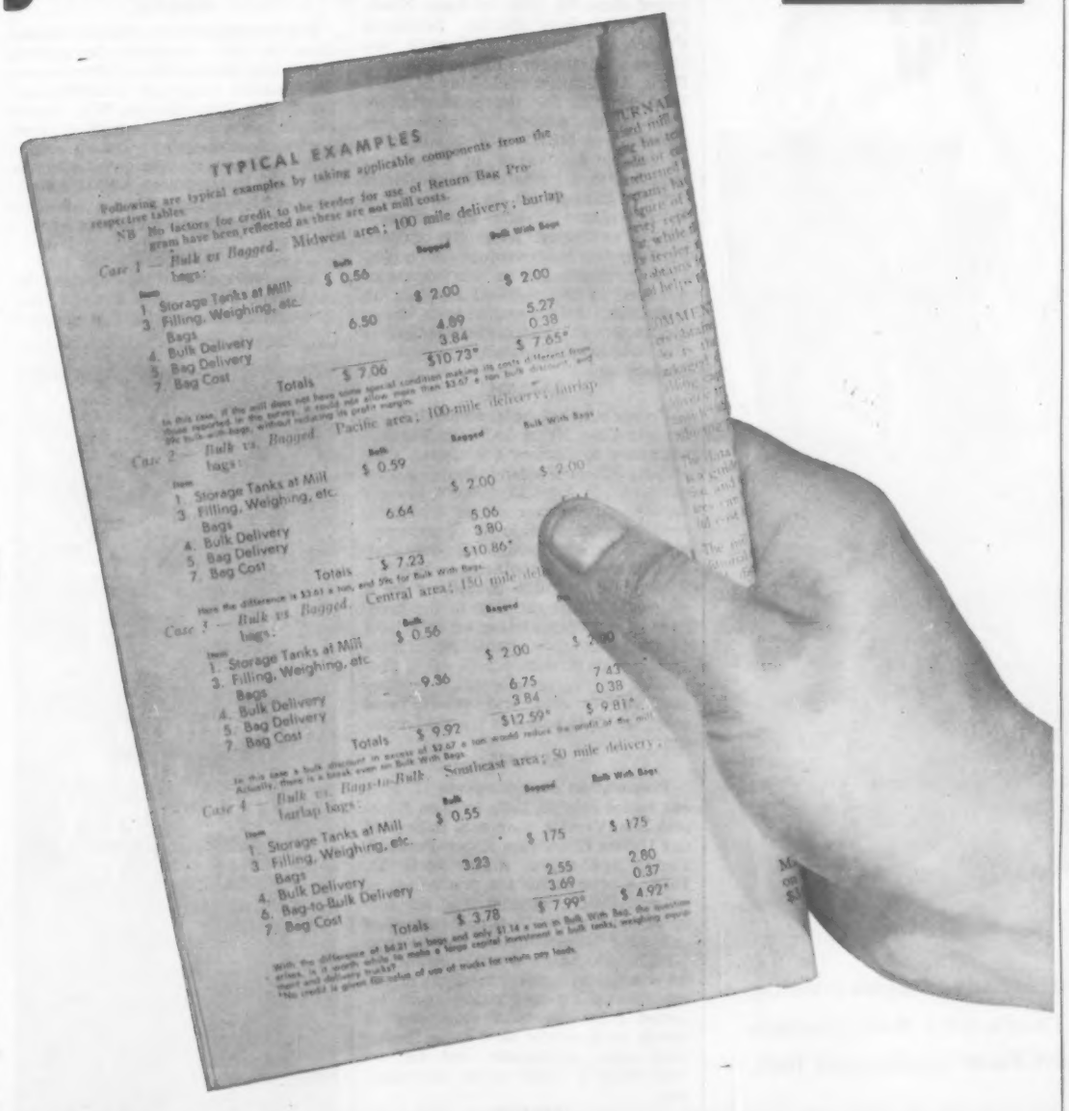
Leon S. Jackson Resigns Position

PORTLAND—Leon S. Jackson recently resigned his position as secretary of the Pacific Northwest Plant Food Assn. He gave ill health as his reason for resigning.

In 1920, Mr. Jackson joined the staff of the Commercial Review and in 1922 was named its editor. He purchased the trade publication in 1928 and was publisher until 1952 when he sold it to Russ Hays.

In 1920, he organized the Oregon Feed & Seed Dealers Assn. and remained as its manager until 1955. He organized the Washington-Oregon Fertilizer Council in 1948 and this became the Pacific Northwest Plant Food Assn. three years later. He has served as manager since its founding.

you need to know costs!


TYPICAL EXAMPLES
Following are typical examples by taking applicable components from the respective tables
NB No factors for credit to the feeder for use of Return Bag Program have been reflected as these are not mill costs.
Case 1 — Bulk vs Bagged. Midwest area; 100 mile delivery; burlap bags:
Case 2 — Bulk vs. Bagged. Pacific area; 100-mile delivery; burlap bags:
Case 3 — Bulk vs Bagged. Central area; 150 mile delivery; burlap bags:
Case 4 — Bulk vs. Bags-to-Bulk Southeast area; 50 mile delivery; burlap bags:

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3/10 lb. per year at 8 weeks

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DECATUR, ARKANSAS

his best friends won't tell him . . . he's a Brand X.

too bad, too. he'll probably spend a long time here; never get to travel.

Travel is one of the greatest advantages in being a sack of Kent Feed. That's why Kent dealers make more money: Kent Feed moves out fast.

KENT FEEDS

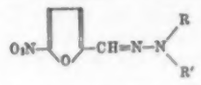
THE FEED WITHOUT A FILLER

Muscatine, Iowa Sioux City, Iowa

Patents Issued by U.S. Patent Office

2,943,019

Anticoccidial Composition and Method of Combating Coccidiosis. Patent issued June 28, 1960, to Michael P. Natt, Norwich, N.Y., assignor to The Norwich (N.Y.) Pharmacal Co. Application made June 24, 1958. A composition having anticoccidial properties upon administration to poultry, comprising the combination of from about 0.003% to about 0.02% by weight thereof of a chemical compound represented by the formula:



in which R represents a member of the group consisting of hydrogen and lower alkyl, and R' represents a member of the group consisting of hydrogen, lower alkyl and alkanoyl and poultry feedstuff.

2,943,023

Production of Spiramycin. Patent issued June 28, 1960, to Leon Ninet, Paris, and Jean Verrier, Boulogne, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris. Application made May 24, 1957. In a process for the production of spiramycin wherein Streptomyces ambofaciens NRRL 2420 is subjected to aerobic cultivation in a nutrient medium until substantial antibiotic activity is produced by the organism in the culture medium and spiramycin is recovered from the culture medium, the improvement which consists in employing as the source of nitrogen in the nutrient medium an ammonium salt together with chloride, phosphate and carbonate anions and sodium, magnesium, zinc and cobalt cations.

2,943,024

Preparation of Spiramycin III. Issued to Leon Ninet and Jean Verrier, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris. Application made April 11, 1958. A process for the production of an antibiotic consisting predominantly of spiramycin III which comprises culturing Streptomyces ambofaciens NRRL 2420 under aerobic conditions on a nutrient culture medium in the presence of a propionylating agent selected from the class consisting of propionic acid, propionic acid salts, propionic esters, propionamide, propanol, valeric acid and valeric acid salts, which is added to the said medium.

2,943,025

Preparation of Spiramycin II. Patent issued July 28, 1960, to Leon Ninet and Jean Verrier, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris. Application made April 11, 1958. A process for the production of an antibiotic consisting predominantly of spiramycin II which comprises culturing Streptomyces ambofaciens NRRL 2420 under aerobic conditions on a nutrient culture medium in the presence of an acetylating agent selected from the class consisting of acetic acid, acetic acid salts, acetic acid ester, acetamide and butyric acid which is added to the said medium.

2,934,431

Process for Forming Meal from Cottonseed Edible by Animals and Poultry. Patent issued April 26, 1960, to George C. Cavanaugh, Fresno, Cal., assignor to Ranchers Cotton Oil, Fresno. Application made Sept. 9, 1957. In a process for forming feed for animals and poultry from cottonseed containing toxic principles and including both comminuting and cooking the cottonseed, the steps of mixing dry soda ash with the comminuted cottonseed having moisture previously added thereto by the cooking whereby the soda ash reacts with toxic principals of the cottonseed, and extracting oil from the comminuted cottonseed subsequent to the mixing of dry soda ash therewith.

2,934,432

Treatment of Cottonseed Meals to Remove Residual Pigments. Patent issued April 26, 1960, to William H. King and Vernon L. Frampton, Metairie, and Aaron M. Altschul, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture. Application made Jan. 9, 1958. A process comprising contacting cottonseed meal with an excess of a primary organic amine for at least 5 minutes, thereby to convert gossypol and gossypol-like pigments to derivatives soluble in nopolar organic solvents, and extracting the contacted meal with a nonpolar organic solvent to remove the produced derivatives and excess primary organic amine.

2,940,856

Feed Compositions. Patent issued June 14, 1960, to Andre Geisendorf, Basel, and Konrad Streiff, Birsfelden, Switzerland, assignors to Hoffmann-La Roche, Inc., Nutley, N.J. Application made Feb. 17, 1959. A feed composition containing as an essential ingredient therein an alkyl ester of 2,6,11,15-tetramethyl-17-(2,6,6-trimethyl-1-cyclohexen-1-yl)-2,4,6,8,10,12,14,16-heptadecaoctaen-1-oic acid.

2,940,857

Preservation of Silage. Patent issued June 14, 1960, to Fred N. Andrews, West Lafayette, Ind., assign-

Planning a new mill or elevator? KELLY DUPLEX can help you.

Maybe you've been thinking about a new mill—a new addition—or a new machine. Then again, maybe you've just been wondering how you can get MORE from your present space.

Whatever it is, we would like to talk to you about it.

We've shown a lot of others how good machinery and good planning can do wonders for their capacity, their efficiency, and their profits—at COMMON SENSE COST. The chances are we can do the same for you.

Don't hesitate to send us the coupon. There will be NO obligation—and NO high pressure salesmanship. We don't do business that way.

Duplex Mill & Mfg. Co., Springfield, Ohio
We would like to talk to you about planning. We're interested in .....
.....
NAME .....
FIRM .....
ADDRESS .....
FEEDSTUFFS

or to Purdue Research Foundation, Lafayette, Ind. Application made Dec. 19, 1958. In a process for the preservation of silage, the step which comprises uniformly incorporating in silage prior to storage zinc bacitracin in amounts ranging from 1 to 50 grams/ton of silage.

2,940,858

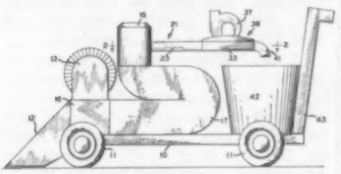
Method of Making Fodder from Chopped Straw. Patent issued June 14, 1960, to Alfred Flechsig, Zwonitz, Germany, assignor of one half to Paul O. Tobeler, doing business as Trans-Oceanic, Los Angeles, Cal. Application made Oct. 31, 1957. A process for manufacturing fodder from chopped straw which comprises: Heating a mixture of chopped straw, water and sodium hydroxide at a temperature of 212° F. for a period of two hours so as to partially break down the cell wall structure within said straw, adding beer yeast, water and quick lime to the so-heated mixture; heating the resulting mixture at a temperature of 212° F. for a period of two hours so as to plasmolyze said yeast and so as to break down the said cell wall structure within said straw; neutralizing the reaction mixture containing said yeast with hydrochloric acid to a pH of from about 6 to 8; and removing water from said neutralized mixture.

2,941,884

Animal Feeds, Animal Feed Supplements and Methods. Patent issued June 21, 1960, to John Alfred Aeschlimann and Benjamin Tabenkin, Montclair, N.J., assignors to Hoffmann-La Roche, Inc., Nutley, N.J. Application made Oct. 9, 1957. An animal feed composition comprising nutrient material for the animal and a hypoglycemic 1 - substituted-3 - arylsulfonylurea compound.

2,942,976

Method of Pelleting Roughage Crops. Patent issued June 28, 1960, to Max A. Kosch, Columbus, Neb., assignor to Kosch Co., Columbus. Application made April 21, 1958.



A method of forming hay into a compressed firm shape comprising heating the hay to a temperature between approximately 160° F. and 212° F., forming the heated hay into the desired shape while simultaneously subjecting it to pressure, and maintaining the hay in the desired shape during cooling thereof.

2,943,938

Gibberellin in Animal Feeds. Patent issued July 5, 1960, to John R. Zeeuw, Gerald A. Donovan and William C. Sherman, Terre Haute, Ind., assignors to Chas. Pfizer & Co., Inc., New York, N.Y. Application made Feb. 6, 1958. Animal feed composition comprising a nutritionally-balanced animal feed and a small, growth-promoting portion of gibberellin.

Poultry Exhibit Plans New Exhibits, Displays

HARRISBURG, PA. — The Pennsylvania Poultry Federation's annual Poultry Festival Aug. 25-28 at Hershey will feature a number of new exhibits and displays this year, according to William Robinson, general chairman.

Also included will be an abundance of poultry products, including what has been the favorite in past years—charcoal-broiled chicken.

Climaxing the festival which is held in conjunction with Pennsylvania Dutch Days in Hershey Park will be the crowning of Miss Pennsylvania Poultry Industry Queen Aug. 27. Seven misses, selected in various country contests will vie for the title, says Earl Horst, Myerstown, contest chairman.

Other attractions will be a Bantam show with an expected 300 entries, baseball playing chickens, egg exhibit, incubators with chicks hatching before the crowds, a display of live pheasants and a creaking old mill.

On Aug. 27, the federation will be prepared to serve as many as 12,000 complete dinners featuring barbecued chicken. On other festival days, the food booth will dispense chicken and turkey sandwiches, pickled eggs, egg nog, chicken corn soup and other food.

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The Story of Change

Group Buying of Formula Feed Makes Slow Progress in West

By Jess F. Blair
Feedstuffs Special Writer

The California poultry cooperatives system of hiring a feed mill to manufacture feed at a lower cost seems to have reached a peak. Many feed mill owners feel that after poultry owners have given this method a good trial, they will again begin buying complete feeds from a mill, or at least have the mill provide the concentrates and premixes.

The practice started when poultry cooperatives decided to buy in large quantities for their members. A formula is made up and a representative takes this around to various mills for bids. The co-op members furnish all ingredients and pay the mill owner a certain price per ton for the mixing.

"There might be some saving to this type of buying," said C. D. Ludden, manager of the Albers Feed & Farm Supply in Modesto. "Laying mash formulas are almost standardized, and nearly everyone knows the requirements. At the present price of grain and other ingredients, any poultry owner can buy bulk feed for about $3.34 per hundred pounds. When the mixing is done in an independent mill, these members could possibly get the feed as low as $3.04."

Yet there are some problems involved, continues Mr. Ludden. The customers have no way of knowing if all the ingredients will be added to the mixture. They can't keep a representative at the mill to supervise the mixing, and there is no way to analyze the feed after it is mixed.

"I am not saying that mill owners will deliberately short-change these customers on certain ingredients," continued Mr. Ludden, "but it is possible. For awhile, the poultryman wouldn't know the difference. Pullets that are strong and vigorous will produce for several months on an inferior feed, but after 7 or 8 months of production they will drop off. This is when the owner starts to lose money."

Most cooperatives buying in a group have made up their own formulas. They usually buy ingredients from brokers who operate in nearly all of the larger cities. In Los Angeles, these brokers usually charge 2½¢ cwt. for buying grain and get $1 ton for hay.

A feed company in Turlock was approached by a cooperative agent and asked to make bids on mixing feed for the group. The mill owner said the group wanted him to submit a bid every Monday morning along with several other mills.

"I turned them down," he explained. "It seemed too much trouble, and I had no assurance I could hold the contract week after week."

Small Mills Attracted

The large company is seldom interested in such contracts because of higher operational costs and the fact that the mill is already kept busy. The small feed mill, owned by a poultryman or livestock feeder, can often make a profit by taking such contracts. Usually the mill is busy only a few hours a day, and the owner may even use farm labor to operate it.

"Such a man might make a small profit at $1.50 per ton," said the owner of a large feed company. "I would set $1 per ton net profit as the lowest possible figure at which anyone could operate. In our own mill we have union labor, with the lowest paid worker getting over $2 an hour. With these costs, we are definitely not interested in bidding on any outside mixing."

Formula Mixing

A mill owner near Los Angeles reported that he had been approached not only by a cooperative poultry association, but also by two independent poultry operators who wanted feed mixed to a certain formula.

"I don't blame the poultrymen for trying to lower feed costs," he pointed out, "but it seems doubtful if they will save anything this way. To stay in high production, those hens must be fed the best feed that modern techniques can formulate and manufacture. Such things as antibiotics, trace minerals and micro-ingredients are needed in a good laying mash, and it is too much temptation for the feed company to stint on these ingredients. This is especially true when the customers are buying nothing from the mill and could turn to someone else next week for their mixing. As long as that mill owner is selling the concentrates, he will be interested in making a good feed."

Poultry owners seem to be of mixed opinions on the practice of group buying. One owner with 5,000 birds said he had saved several cents per hundred pounds of feed, but had been using the feed for only 2 months. Another poultryman who admitted that his group had little control over this type of custom mixing thinks a better solution would be for several poultrymen in the same community to build a mill of their own. The drawback to this, he suggested, is that some of the men were having

EDITOR'S NOTE: Jess Blair, a special writer for Feedstuffs, has recently completed an extensive tour of several western states. In the accompanying article, he reports on some of his observations of feed industry developments in these western states. Feed men in all areas of the nation will be interested in the trends pointed out by Mr. Blair.

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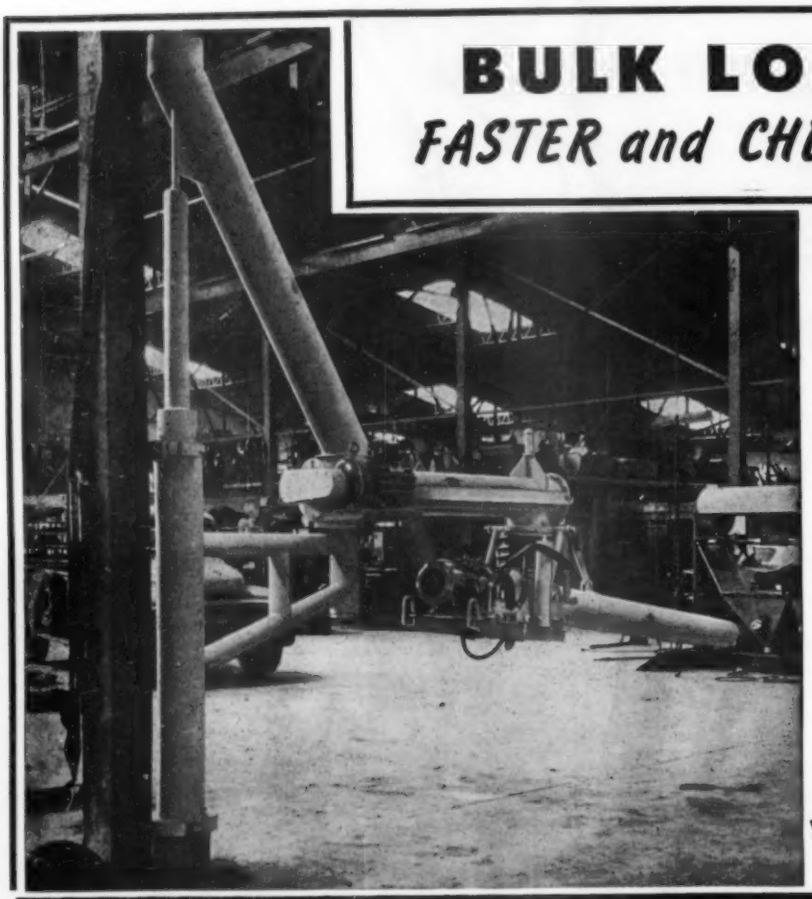

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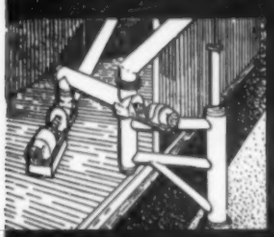

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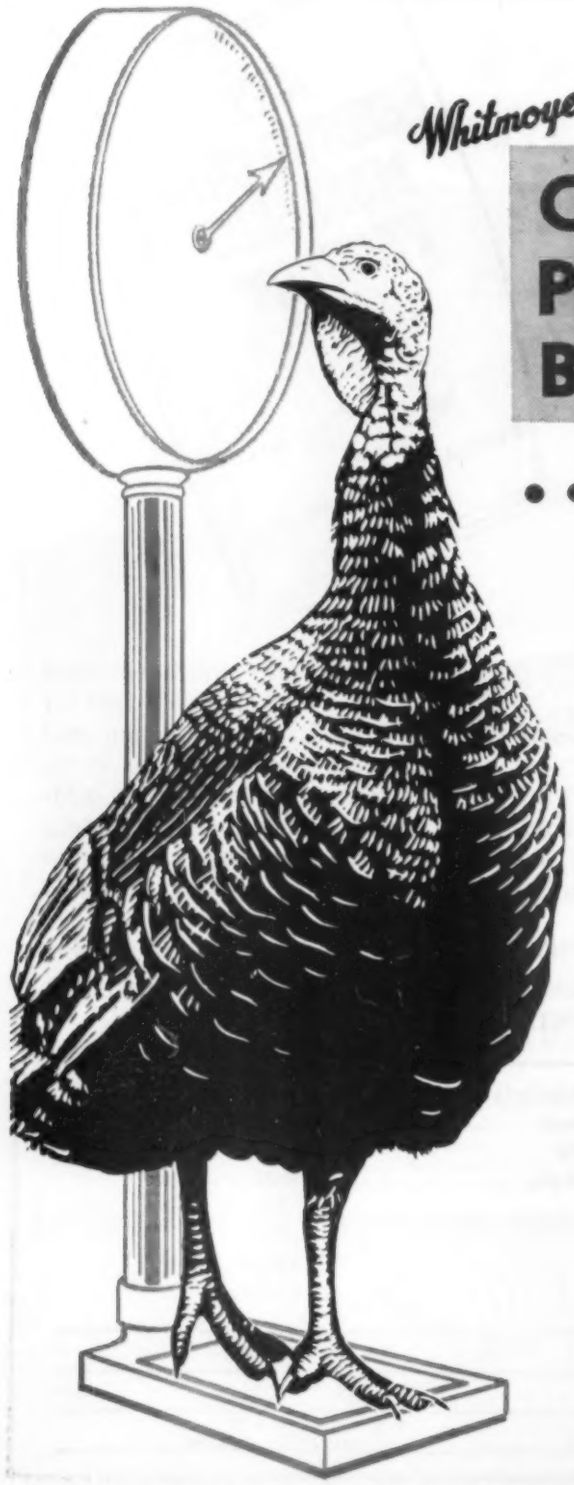
difficulty and might not be in business long enough to justify the investment.

"I think that group buying may be a temporary thing," he said. "The small poultryman is either enlarging his flock or getting out of business. Within five years, I think most owners will have their own mills. By that time, we will have only two types of poultry operators in the state—the big independent poultryman with his own feed plant, and the integrated businesses where the chickens are owned by the large feed companies."

This seems to be the consensus of opinion of most people in the feed industry. Group buying of formula feed is a temporary thing and will likely be replaced by something else within the next few years.

FEED STORE LICENSED

DEL NORTE, COLO.—Silver State Feed Store has been issued a new state store license to be reopened under the new management of John Gjellum.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Why can't life's problems hit us when we are 18 and know everything?

◆ ◆ ◆

The patient was fumbling in his pocket.

"You don't have to pay me in advance," commented the dentist with a smile.

"I don't intend to," rejoined the patient. "I'm only counting my money before you give me the gas."

◆ ◆ ◆

I got to thinking yesterday—you know how you do when the television won't work.

◆ ◆ ◆

A salesman is a fellow who wishes he had as much fun at sales meetings as his wife thinks he does.

◆ ◆ ◆

"If you have the facts on your side," said the professor to his eager law students, "hammer them into the jury."

"But if you have the law on your side, hammer it into the judge."

A lone hand shot ceilingward.

"Sir," asked a student, "what if you have neither the facts nor the law on your side?"

"Then," replied the professor, "hammer the table!"

Pet Food Institute Sets Convention

CHICAGO — A presentation which will reveal actual operating percentage figures of several member firms is expected to be a highlight of the third annual convention of the Pet Food Institute Sept. 8-9, Drake Hotel, Chicago. According to the convention chairman, Parker Long, advance reservations indicate that attendance will surpass the record 200 set at the 1959 session.

Large, medium-sized and small manufacturers will participate in the operating cost program on an anonymous basis. This will enable each member to judge his costs of production, labor, distribution, etc., in relation to other pet food manufacturers with similar volume.

Also scheduled for the first day's program is a merchandising presentation by LeRoy King, editor of Food Topics magazine. His talk is entitled "The Supermarket Operator Takes Another Look at the Pet Food Department." Glenna McGinnis, food editor of Woman's Day magazine, will discuss pet food labels from the housewife's viewpoint in her talk entitled "Set A Place For Fido."

Sept. 9, the state and federal regulations committee will present for membership approval a proposed labeling guide. Members will be asked to comment on the guide in order that any necessary changes can be made before it is presented at the October meeting of the Association of American Feed Control Officials. Also on the Friday program is a report of the pet food market from the A. C. Nielsen Co. and a complete review of all institute activities during the past year.

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Sterling Sales, Profits Set Half-Year Mark

NEW YORK—An increase of 10.1% in net profit and 7.6% in sales of Sterling Drug Co., Inc., for the six months ended June 30 brought both to new highs for any half year in the company's history, J. Mark Hiebert, chairman and president, reported August 4.

Net earnings for the first six months of 1960 were $10,467,215, an increase of $958,253 over the $9,508,962 reported for the corresponding period of 1959. Current half year's earnings are equivalent to $1.32 per share of common stock, compared with $1.20 per share.

Sales for the first half of 1960 were $110,661,398, up $7,821,457 from the $102,839,941 reported for the six months ended June 30, 1959.

For the three months ended June 30, net earnings were $4,441,917, or 56¢ per common share, an increase of 5.6% from the $4,205,315, or 53¢ per share, in the 1959 second quarter. Sales for the second quarter were $52,133,834, compared with $49,685,029 for the corresponding quarter of the previous year.

Study Insects Harmful To Grain in Mexico

MANHATTAN, KANSAS—The wide variations in Mexico's terrain afforded a Kansas State University entomologist, Donald A. Wilbur, an unusual opportunity in recent months for basic research on how such factors as altitude, moisture and temperature affect the activities of grain damaging insects.

Mr. Wilbur, one of the world's leading authorities on stored grain insect problems, has just returned to Kansas State from a temporary appointment to the Mexican staff of the Rockefeller Foundation.

The investigations carried on in Mexico by Mr. Wilbur were associated with various basic studies of how environment factors affect stored products insect activity. The public health service recently announced a grant of $51,416 to support these Kansas State studies, which are directed by Mr. Wilbur, for another four years.

Under conditions in Mexico, Mr. Wilbur was able to observe the effects of altitude on grain storage insects—all the way from tropical, sea level conditions to an altitude of 9,000 ft.—at experimental stations within a distance of about 100 miles. To have carried on a similar study in the U.S. would have required travel across half the continent.

One of Mr. Wilbur's more unusual findings was that large masses of grain cool very slowly at high altitudes. At 9,000 ft. Mr. Wilbur observed "terrible" infestations under conditions where the scientists were unable to experimentally produce insects in the laboratory.

Such basic work as Mr. Wilbur and his co-workers are engaged in is designed not only to help solve long range American grain storage problems, but also could be important in helping underdeveloped nations of the world solve some of their food problems.

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U.S. to Show Foods In German Exhibit

WASHINGTON—Whetting of the European's taste for American produced chickens and turkeys may be the result of an upcoming foods exhibition. American agricultural products will be on sale and will be given away at the U.S. exhibit at the IKOFA International Exhibition of Groceries and Highclass Provisions in Munich, Germany, Sept. 23 to Oct. 2.

These foods and others could become familiar on the grocery shelves of West Germany and other areas of Europe.

The Foreign Agricultural Service of the U.S. Department of Agriculture is sponsoring the 14,000 sq. ft. exhibit in cooperation with the U.S. agricultural and food trade.

Products to be sold at retail include canned soups, prepared food mixes, honey, canned chicken and turkey, one pound packages of frozen chicken parts and precooked frozen chicken pieces and turkey rolls.

The chicken pieces and turkey rolls, cooked in special deep-frying equipment at the exhibit and served hot to the public, have been sold at previous U.S. exhibits in Germany and have become famous as American delicacies at these fairs, according to USDA.

Sales of the chicken pieces and turkey rolls during the 10-day Munich exhibit are expected to exceed 25,000 individual servings. Each serving is accompanied by American cranberry sauce and a hard roll made from American wheat.

Another innovation that promises to attract German visitors is a coupon redemption program. Visitors can clip coupons from advertisements of the U.S. exhibit in German daily newspapers and bring them to the exhibit entrances. They can exchange the coupons for slips drawn from a grab-bag entitling them to prizes of U.S. food products.

Cooperating with USDA in sponsoring the exhibit at Munich are the following trade groups and associations: the U.S. fruit industry; Grocery Manufacturers of America, Inc.; Great Plains Wheat Market Development Assn. with European offices in Rotterdam; Institute of American Poultry Industries with European offices in Frankfurt; Soybean Council of America with offices in Rome; U.S. Rice Export Development Assn., and the Honey Industry Council of America.

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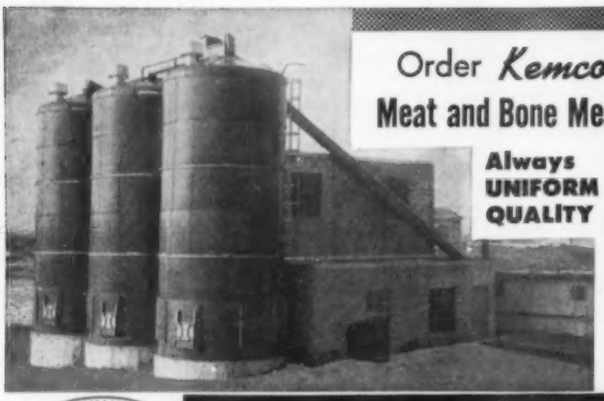

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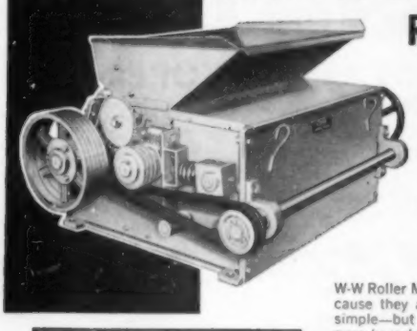

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Feed Additives for Beef Cattle

By Dr. Irwin A. Dyer
Washington State University

(EDITOR'S NOTE: Dr. Irwin Dyer, Washington State University department of animal science, presented the accompanying article as a talk at the Sixth Annual Beef Cattle Day held recently in Pullman. Numbers appearing in parentheses throughout the story designate references listed at the end of the article.)

Since 1940, the output per man has increased 212% for producing feed grains but only 12% for meat animals that consume this grain. Production of beef does not lend itself to the same degree of automation as producing grain. Yet, we must admit that progress has lagged in developing more efficient means of growing and fattening beef.

Feeding beef cattle is becoming highly competitive. This competition has meant that many small feeders could not make a sufficient profit to stay in business. Hence, larger feed lots and integration have developed to provide more economical units. Beef must be produced more efficiently and in an ever increasing quantity to feed a world population that will increase by 570 million between 1960-1970 and double itself in the next 40 years.

Various approaches have been made to increase efficiency in the feed lot. One that shows an immediate return has been that of using feed additives. During the past five years, feed additives have netted millions of dollars to cattle feeders who have used them properly. Since there are many additives on the market and since no feed additive is equally effective under all conditions, a feeder is confronted with the question of which one or ones to use. In order to choose the additive most appropriate for his condition, he must choose one that:

1. Is safe to use and does not leave a residue in meat. If released by FDA, and if feeding instructions are followed, it is generally assumed to be safe.
2. Increases net profit. All costs incident to the use of the additive must be considered in figuring profit.
3. Is consistently effective. Some additives are very effective under one condition and ineffective in others.
4. Gives an added response to a well-balanced ration that already contains one or more additives. Many compounds increase gain from 0.1 to 0.3 lb. per animal per day over animals not receiving an additive. Yet, when combined with another additive, the effect of the two is little if any greater than from one alone.

We must consider both the older and the newer additives with the above criteria in mind.

ANTIBIOTICS—Late in the 1940's it was observed by several researchers that certain antibiotic fermentation residues increased rates of gain in poultry, swine and later in cattle. The earlier experiments with cattle were not too satisfactory because excessive amounts of antibiotics were used. Chlortetracycline (Aureomycin) and oxytetracycline (Terramycin), both broad spectrum antibiotics, are the primary ones that have been fed to ruminants. Their benefits have been demonstrated under various conditions. Zinc bacitracin (Baciferm) is now under investigation and also shows promise as a feed additive. (See Table 1.)

A review of the literature (1) under a wide variety of conditions, indicates definite advantages for antibiotics.

Two or more feed additives often have a supplementary effect on performance. However, the effects of two are seldom additive. A partial example of this is observed in Table 2, where the effects of Aureomycin and Terramycin are slightly less in the presence of stilbestrol.

The effects of antibiotics on gain were recently reviewed by Riggs (2). He reported a 6% average increase in gain with a 4% increase in feed efficiency when antibiotics were fed at the 75 mg. per day level. Thirty-two experiments were included in his review.

In experiments at the Washington Station, antibiotics (Aureomycin and Terramycin) have resulted in an increase in gain of from 9-20% with a feed saving of 5-20%.

HORMONES—Dozens of different hormones and/or hormone combinations have been tested. Some have been ineffective while others have been effective—but only over a short period. Others have given satisfactory responses but have been too expensive to be used extensively.

Many experiments have been conducted to show the beneficial effect of Synovex (progesterone and estradiol) and stilbestrol on growth and feed efficiency. Thompson and Kercher (3), Thurber, et al. (4) and others have reported similar growth responses from Synovex and stilbestrol.

Synovex has not been widely used in the feed lot because of its relatively high cost. Fewer studies have been undertaken on the mode of action and effects on carcass characteristics and quality.

There is no apparent difference in mode of action of "fed" and "implanted" stilbestrol. The method of administration then, depends on the cost and personal preference. The vast data to date indicate that stilbestrol produces about a 17% increase in gain and a 12% increase in feed efficiency. This compound has been effective under such a wide range of conditions that it is now used in fattening 50 to 70% of all feed lot cattle.

Its effectiveness has also been a disadvantage in that some feeders operate on the theory that if the recommended level is good, then more would be better. Also, feeders, without knowledge of it, may have fed certain by-products or mineral mixtures which contained stilbestrol or other estrogenic activity.

Largely because of such misuse and because feeders tend to market feed

TABLE 1. Summary of the Effects of Antibiotics on Beef Cattle Performance

	Aureomycin (65 comparisons)		Terramycin (47 comparisons)		Bacitracin (6 comparisons)	
	Control	Aureom.	Control	Terram.	Control	Bacit.
Av. initial wt., lb.	646	646	635	635	591	591
Av. daily feed, lb.	20.5	20.5	21.0	21.1	18.6	18.0
Av. daily gain, lb.	1.90	1.98	1.89	1.95	1.65	1.65
Av. feed per 100 lb. gain, lb.	1079	1079	1111	1082	1127	1091

TABLE 2. Antibiotics With and Without Stilbestrol

	——No Stilbestrol——		Stilbestrol (fed or implanted)	
	Aureomycin	Terramycin	Aureomycin	Terramycin
No comparisons	9	6	9	7
Av. increase in rate of gain, %	8.3	8.8	5.2	6.1
Av. increase in feed efficiency, %	6.5	6.5	4.9	8.0

TABLE 3. Dynafac for Beef Cattle

	Control	Dynafac
No. animals	67	134
Av. daily gain	2.83	3.03
Feed per lb. gain	7.63	7.32

lot cattle by weight rather than grade, packers often discriminate against stilbestrol fed or implanted cattle. Many packers feel that the steers have an excess of external fat (bark) without sufficient marbling; hence, the live grade and carcass grades do not correspond.

HYDROXYZINE (Tran-Q)—Tranquilizers, in one form or another, have been used for many years in human and veterinary medicine to diminish anxiety. However, their use in livestock feeds is relatively new. The limited research to date indicates that the tranquilizer of choice for beef cattle is hydroxyzine.

A recent review (5) of tranquilizer research in colleges throughout the United States summarized eight experiments in which hydroxyzine had been used for steers. Hydroxyzine increased weight gains in six of these eight trials. Thus, increases in gain ranged from 0 to 20%. Savings in feed costs, in general, have been proportional to increases in weight gains.

The experiments at this station with hydroxyzine indicated a marked beneficial effect from this additive. In one test with 60 steers per group (6), gains were increased from 2.87 to 3.21 lb. per day when hydroxyzine was fed at 5 mg. per head per day. The feed required per 100 lb. gain was reduced by 11%.

In a second trial, gain was increased from 1.43 to 1.68 lb. per head daily when 2.5 mg. hydroxyzine was fed. Again, an 11% reduction in feed cost was observed. A third experiment at this station with calves indicated no beneficial effect from hydroxyzine. There were only five calves per group in this test. Also, these calves were dropped on the college farm and consequently had not been challenged by transportation and new location stresses.

A review in 1958 (7), covering nineteen experiments, indicated a 7.7% increase in gain with a 6.1% feed saving when hydroxyzine was fed to steers. This report indicated an $8.55 return over similar control animals when hydroxyzine was used.

Many other tranquilizers such as reserpine, chlorpromazine, meprobamate, perphenazine, promazine, carbromal and benactyzine have been tested with cattle or smaller laboratory animals. It will be interesting to watch the results in the tranquilizer field as the mode of action is learned and new ones are found.

TETRA ALKYLAMMONIUM STEARATE (Dynafac) — Dynafac, one of the newer feed additives, has been used in a number of cattle feeding experiments since 1956. Since Dynafac is insoluble; only a small percentage of it is absorbed from the intestinal tract. Hence, it acts through the microflora in the digestive tract rather than in the body proper.

The effect of Dynafac on growth rate and efficiency of gain in 5 tests conducted at Washington State University is shown in Table 3.

These data are from cattle of different weights, different rations and at different seasons. One similarity was that the crude fiber of all the rations averaged between 12 and 15% with an over-all average of 13.56%. Under such varied conditions, gain was increased an average of 0.2 lb. per head per day. Similarly, the feed required per 100 lb. of gain was reduced an average 31 lb. when Dynafac was fed.

These responses to Dynafac are less than those reported from South Dakota (8) where an increase of 0.31 lb. per steer per day was found. It is interesting to note that this was with a ration quite different from that generally used in the Northwest (corn-alfalfa-soybean oil meal), and further that their rations contained approximately 8% crude fiber whereas the WSU rations contained 13.56%.

Data from three Montana experiments (9, 10, 11) in which calves and yearlings were wintered on high levels of roughage indicate little or no benefit from Dynafac.

Many other experiments and demonstrations in which Dynafac has been used are reported in the literature. The results to date suggest that the response to Dynafac decreases as the level of roughage in the ration increases.

3,3' DIALLYLHEXESTROL (Diallyl)—Diallyl, a diphenyl hexane derivative, is a newcomer into the feed additive field. In fact, it as yet has not been released by FDA.

Experimental evidence is accumulating to indicate that this compound improves rates of gain and efficiency of feed utilization. Three tests at this station indicate that this compound increases gains from 0.17 to 0.35 lb. per day and decreases the amount of feed required by 11%.

Cattle fed 25 mg. diallyl daily averaged one-third of a grade higher at market. In addition, these steers had a 12% greater marbling than similar control steers.

Another interesting fact about diallyl is that it apparently is synergistic with certain other compounds. Diallyl-choline and diallyl-Dynafac combinations have been particularly effective at this station.

YEAST—Yeast is available in several forms for use in livestock feeds. Generally speaking, three forms — dried yeast, irradiated yeast and live yeast—are available. Dried yeast cells are not capable of starting a fermentation, whereas live yeast is capable of starting a fermentation. Irradiated yeast is a dried non-fermentative yeast which is used primarily for its high vitamin content.

Most nutritionists and cattle feeders feel that mature ruminants are capable of sustaining the fermentation process in the rumen and that through this process, an adequate

TABLE 4. Effect of Agrozyme and Kelp on Steer Performance (Preliminary)

	Lot numbers and treatment					
Treatment	1 Basal*	2 Agrozyme .0075 lb.†	3 Kelp‡ 2%	4 Agrozyme + Kelp	5 No. 1 + Agrozyme (Top dressed)	6 No. 2 + Agrozyme (Top dressed)
Av. daily gain	2.66	2.75	2.84	3.49	2.65	2.87

	%		%
*barley	54	molasses	4.5
beet pulp	25	salt	1
oats	10	dical	0.5
fat	5		

This mixture was fed as 80% of the total with 20% chopped alfalfa serving as the roughage.
†Provided by Merck and Co., Rahway, New Jersey.
‡Ascophyllum nodosum, provided by Seaweed Products, Inc., Seattle, Washington.

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SELLIN' SAM **By Jim Zilverberg**

"I'd like you to meet my new assistant!"

amount of B vitamins is produced to meet the animals' need for normal production. On the other hand, the greater the gain, the more critical is the requirement for the various nutrients. It also is possible that yeast is supplying enzymes which might influence performance.

A recent test at this station (12) with live yeast culture showed that it increased gains from 2.74 to 2.87 lb. per steer per day. In addition to the 0.13 lb. difference in weight gain, an improvement in hair coat, favoring the yeast fed group was observed. No bloat was observed in either lot; consequently, the yeast culture could not be evaluated with respect to bloat control. Fifty steers were used as controls and 150 were fed 0.25 lb. per head daily of live yeast culture.

ENZYMES — Various enzymes are now available for incorporating into livestock rations. Enzymes have been tested more extensively with swine and poultry than with beef cattle. Nevertheless, certain enzyme preparations, primarily Agrozyme, have been used rather extensively in beef cattle experiments. Twenty such tests in which enzymes were used were recently reviewed (13). This review indicated an advantage of Agrozyme under certain conditions. Some conclusions of this report were that:

1. Pelleting deactivates some or all of the enzyme activity.

2. The high moisture content of grains apparently has little if any effect on the response to enzymes.

3. The ration, especially with respect to the nutrient content and balance, will influence the response to Agrozyme.

Results in Table 4 indicate a response to Agrozyme even when pelleted with the concentrate portion of the ration. As will be observed, this level was too low, or a part of the activity was destroyed by pelleting. The fact that a combination of Agrozyme and kelp had an apparent synergistic effect is both interesting and not understood. Efficiency of feed utilization was increased by as much as 10% by the use of Agrozyme.

KELP—Kelp is a dried ground seaweed. It may be dried either artificially or by the sun. Kelp produced in the United States has a relatively small amount of protein and fat but contains over 30% minerals. It is fed primarily to provide the latter.

A recent beef cattle test at this station with Kelp (a Norwegian Kelp, Ascophyllum nodosum) resulted in an increase in gain of 0.26 lb. per steer per day with an increase in feed efficiency of 11%. Since steers in this particular test had rumenitis, we were not sure whether the kelp was contributing to the ration or acting as a therapeutic agent.

Because of this increase in gain owing to kelp, a second test was conducted. The treatments and results of this test are in Table 4. These preliminary data confirm the earlier test. A 10% increase in gain and a 4% increase in feed saving occurred when 2% kelp was fed. An apparent synergistic effect between kelp and Agrozyme exists. As will be observed from lot 4, a substantial increase in gain occurred when these two compounds were fed concurrently.

GOITROGENS — Manipulation of the metabolic rate of an animal offers a great potential to the livestock industry. Rates and efficiency of gain will be improved. Also, regulating the percentage of fat and lean in the carcass is a possibility when the rate of metabolism is controlled. A number of experiments with methimazole (Tapazole) have shown excellent initial responses. Additional studies are needed before all the possibilities of this group of compounds are understood.

The feed additive field is interesting, challenging, and profitable. While using feed additives we must use them with, rather than for, a well-balanced ration.

v v

REFERENCES

(1) AH 805, Iowa State University, 1959.
(2) Riggs, J. K., 1958. "Fifty years of progress in beef cattle nutrition." J. An. Sci. 17:981.
(3) Thompson, Robert C., and C. J. Kercher. "Effect of hormone implants in stocker steers and subsequent feed lot gains." J. An. Sci. 18(3) 1176.
(4) Thurber, H. E., H. T. Strong and M. T. Clegg, 1959. "Relative value of different estrogens and estrogen-steroid combinations upon growth in beef cattle." J. An. Sci. 18(3) 1176.
(5) Charren, E. C., 1959. Review of college research—Tranquilizers. G.L.F. Research Department.
(6) Conducted at the McGregor Land and Livestock Co., Hooper, Wash., through the courtesy of John McGregor.
(7) Excerpts from proceedings of the Sixth Annual Pfizer Agricultural Research Conference, May 29, 1958.
(8) Zimmer, Paul R., and L. B. Embry, 1958. "Feeding trials with Dynafac." South Dakota Farm and Home Research, Vol. IX (4) pp. 24-27.
(9) Thomas, O. O., 1959. "Effect of tranquilizer, Dynafac, Bacitracin and phosphorus in wintering rations for weaned heifers." Am. Soc. An. Prod. W. Sect. Vol. 10 p. XXXVI.
(10) Thomas, O. O., and F. S. Willson, 1959. Completely pelleted rations for fattening steers with and without additional roughage or Dynafac. A. I. Leaflet No. 89.
(11) Thomas, O. O., 1959. Effect of fat, Dynafac, stilbestrol diallylstilbestrol in wintering rations for Hereford steer calves. A. I. Leaflet No. 21.
(12) Conducted at the Rushl and Arnstein Feed Lot through the courtesy of Mark Arnstein.
(13) Dr. Laurent Michaud, March 1960, Progress Report on Enzymes.

OPENS FEED STORE

DALLAS CENTER, IOWA — Joe Cerwinske has opened a new feed business here called the Dallas Feed Center.

FEED LOT FEEDING TRIAL PROVES:

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Photo courtesy of Denver Post

Average more than 9 lbs. extra gain per head at a saving of $1.34 per cwt. of gain during 109 day trial at Monfort Feed Lots, Inc., Greeley, Colorado.

How the feeding trial started. On July 23, 1959, Mr. Kenneth Monfort agreed to make a comprehensive divided lot test comparing Morton Trace-Mineralized Salt and plain salt. From a shipment of good quality Angus heifers received from San Saba, Texas (averaging about 550 lbs.) Mr. Monfort had 146 placed in lot #67 and 148 in lot #70.

For a period of forty-three days before the actual test was to start, all 294 cattle were fed identical rations with plain salt.

After 43 days the test began with the cattle being weighed up. The cattle in lot #67 remained on plain salt while the cattle in lot #70 received Morton T-M Salt instead. All other feeds were identical. The average daily ration consisted of 9 lbs. silage (green chop silage and silage out of pit), 16 lbs. grain mixture (approximately 10% dried beet pulp, 35% corn and 55% milo), 1½ lbs. dehydrated alfalfa and 1 lb. of shorts pellets with stilbestrol.

At the end of the feed lot trial on December 8, both lots of cattle were weighed out and feeding costs were calculated. The T-M fed cattle in lot #70 registered an average extra gain of 9.26 lbs. more than the cattle in lot #67 which were fed plain salt! What's more, the cost of gain for lot #67 was $19.97 per cwt. compared to $18.63 per cwt. for the cattle fed Morton T-M Salt in lot #70! The savings with Morton T-M were a profitable $1.34 per cwt. of gain!

The cost of feeding Morton T-M Salt for the entire 109 day test was less than 17¢ per head more than the cost of feeding plain salt for 109 days! For an extra 17¢ per head for Morton T-M, the Monforts saved $1.34 per cwt. of gain and got more than 9 lbs. of extra gain per head. Figure it out for yourself how much more you can make feeding Morton Trace-Mineralized Salt!

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Cost Study—Part 2

Causes of Differences in Cost Among Four Systems of Feed Distribution

By Dr. Richard Phillips
Iowa State University

EDITOR'S NOTE: In the accompanying article, Dr. Richard Phillips compares the costs of four systems of feed distribution and explains some of the reasons for the differences. In an earlier article, the author of USDA Market Research Report No. 388, "Costs of Procuring, Manufacturing and Distributing Mixed Feeds in the Midwest," gave some additional insights and implications of his study for the feed industry. In the third and final article of the series, Dr. Phillips will discuss the causes of variation in cost of manufacturing and distributing feeds. Dr. Phillips is a professor of agricultural economics at Iowa State University, Ames.

Let's look in a little more detail at what caused the differences in manufacturing and distribution costs among the four types of operation studied in Marketing Research Report No. 388.

First it must be remembered that the costs in this study cover all operations required to get the feed to the final consumer under the four systems, including both manufacturing and retailing. The differences in cost under the four systems are summarized in the accompanying table. The retailer-manufacturer operation is used as the base, since it had the lowest total per ton cost of the four operations studied. The figures in the table show differences between the per ton costs for the retailer-manufacturers and these costs under each of the other three systems of operation. The figures in brackets are negative, indicating a lower per ton cost than that incurred by retailer-manufacturers.

The first line of the table shows the comparison of total per ton manufacturing and distributing costs, not including the ingredient costs. Compared to the retailer-manufacturers, this additional cost was $3.44 per ton for the premix operation, $4.11 per ton for the concentrate operation and $5.62 per ton for the complete feed operation. These are the results. The reasons for these results lie in the comparisons for each type of cost shown in the rest of the table.

Production, Plant Costs

These costs for milling, warehousing and handling represent one of the important areas in which the retailer-manufacturers operate at lower cost than any of the other three systems. **The major reason for this is that they save the extra handling and other plant costs of the retailer.** Actually, the feed manufacturers under the other types of operation have total production costs about $1 per ton less than the retailer-manufacturers because they operate at much larger volumes. But when the retailers' plant and production costs are added in, the total comes out higher under the other systems than for the retailer-manufacturers.

Because of their small volume by comparison, retailers' plant and production costs are quite high compared to those of manufacturers. This explains why the highest total production cost is under the premix system. Retailers mill everything but the trace ingredient premixes under this type of operation. Under the concentrate operation, all but the feed grain is milled into the ration by the manufacturer, so that total production costs are lower than under the premix operation. Since no manufacturing is done by dealers under the complete feed system, the plant costs at the dealer level cover only warehousing and handling. Consequently, the total plant and production costs under this type of operation are only $1.17 per ton higher than under the retailer-manufacturer operation.

The key to lower total production and plant costs under the premix operation is to have retailer-mixers with large volumes. The same is true to a lesser extent under the concentrate operation. On an average, this class of costs runs over twice as much per ton for dealers with 500 tons annual volume as is true for dealers with volumes of 2,000 tons. If the production and plant costs for retailing were cut in half, the premix system would be able to deliver feed to farmers at a lower cost than any of the other systems.

It will be noted from the accompanying table that the total per ton cost for selling and advertising is highest for the retailer-manufacturer system. The basic reason for this is that the major share of total sales cost is incurred at the manufacturing level rather than at the dealer level

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nf-180 frees turkeys of the constant disease drag. Birds grow faster and convert feed more efficiently. All in all, the income-boosting, worry-reducing advantages of nf-180 mean happy customers . . . and bring new ones, too.

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*nf-180 (furazolidone) Level (grams)	YES 7½-10	YES P-50 T-100	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100
Chlortetracycline	YES	NO	NO	NO	YES	YES	YES	YES	NO	NO	YES
Oxytetracycline	YES	NO	NO	NO	YES	YES	YES	YES	NO	NO	YES
Bacitracin	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES
Penicillin and Streptomycin	YES	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO
Penicillin	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO
12½ Penicillin plus 37½ Bacitracin	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES
Erythromycin Stearate	NO	NO	NO	NO	P-? T-YES	P-? T-YES	NO	P-? T-YES	NO	NO	NO
2—Acetylamino 5—Nitrothiazole	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
4—Nitrophenyl Arsenic Acid	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-NO	NO
Carbosone	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
A Sulfa—Tin—Arsenical Comb.	YES	P-? T-NO	NO	NO	NO	P-YES T-NO	P-YES T-NO	NO	NO	NO	NO

KEY — P: Prevention T: Treatment *Each pound of nf-180 Concentrate contains 50 grams of furazolidone

under the systems studied. The retailer-manufacturers apparently do not have sufficient volume to develop a sales organization as efficiently as the larger manufacturers. Furthermore, since they do not have the close day to day contact with customers through dealers, they have to spend more to sell a ton of feed. **This high per ton sales cost is the chief disadvantage of the retailer-manufacturer system compared to the other three systems studied.**

The total sales cost per ton is lower under the premix system than under any of the others. Under this kind of premix system, the premix manufacturer does the brand advertising for the final complete feed made from his premix by the dealer-mixers. And while his sales cost is very high per ton of premix, it is relatively low on the basis of the tons of feed made from the premix. For example, the manufacturer's salesmen receive much more per ton for selling premixes than for selling complete feed. **But on the final complete-feed equivalent, these salesmen get less for selling the premix than if they were selling complete feed.** This same principle works for sales cost on concentrates, and largely explains why total per ton sales costs are less under the concentrate system than under the complete feed system.

Transportation Costs

The total cost of transporting the final feed to customers is low under both the retailer-manufacturer system and the premix system. It is highest under the complete feed system (by $2.68 per ton over the retailer-manufacturers and by $2.70 per ton over the premix operation).

The retailer-manufacturers have to truck feed farther than dealers do in order to get it to the final customer. But there is no transportation cost from manufacturer to dealer under this system. Since the tonnage that is moved from manufacturer to dealer under the premix system is quite small, the total transportation cost comes out a little bit less under this system than under the retailer-manufacturer system.

Under the complete feed system, the total tonnage must be transported twice—from the manufacturer to the dealer and again from the dealer to the customer. Under the concentrate operation, the feed grain in the final ration is transported only once, but the other ingredients are transported twice.

Differences in Cost Per Ton Among Systems Studied

Class of Costs	Type of System (1) Premix	(2) Concentrate	(3) Complete Feed	(4) Retailer-Manufacturer
Total cost without ingredients	$3.44	$4.11	$5.62	$0.00
Production and plant cost	0.81	5.25	1.17	0.00
Sales cost	(4.84)	(3.59)	(1.48)	0.00
Transportation cost	(0.02)	1.34	2.68	0.00
Overhead cost	(0.47)	1.16	3.29	0.00
Ingredient cost	0.53	(1.69)	(0.97)	0.00
Total cost with ingredients	$4.01	$2.46	$4.69	$0.00

For all four of the systems studied, the costs of bringing ingredients to the manufacturer or to the dealer are included in ingredient costs rather than in transportation costs.

Overhead Costs

This class of costs in the accompanying table includes ingredient procurement and research costs as well as administrative and office expenses. Both procurement and research represent fairly small costs per ton of feed sales under all four systems. Retail-manufacturers do spend somewhat less for research than the larger manufacturers, evidently leaning more heavily on publicly-supported research and formula development. But the major differences shown in the table arise in administrative and office expenses themselves.

On a per ton basis, the total administrative and office expense of the retail-manufacturers is equal to that of the larger manufacturers under the other three types of operation. **The cost saving under this system comes in the elimination of the overhead cost of the dealer.**

The premix manufacturers have a very high overhead per ton of premix manufactured. But when this cost is spread over the total tonnage of feed made from the premix, this system has the lowest total overhead of any of the four types of operation.

Concentrate and complete feed manufacturers have about the same overhead cost per ton of feed they manufacture. But when the two systems are compared and put on a complete-feed equivalent, this cost is over $2 per ton less under the concentrate system.

Ingredient Costs

The comparative delivered ingredient costs for the four systems shown in the table result from a combination of factors. Premix manufacturers can purchase premix ingredients more cheaply than any of the other manufacturers because of their larger volume and greater buying power. The other large manufacturers can buy proteins at less cost than the retailer-manufacturers for the same reason. And again for the same reason, the retailer-manufacturers can buy proteins more cheaply than the retailer-mixers under the premix system.

On the other hand, under midwestern conditions, the retailers can buy feed grain at less cost than any of the manufacturers, because they buy largely directly from farmers and save a handling charge. The retailer-manufacturers can get only a part of their grain supply directly from surrounding farmers, and have higher grain costs than retailers, but lower grain costs than the larger manufacturers.

When all of these factors are considered, **the concentrate system gets**

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"I would say that, without any question, nf-180 is the best single drug for turkeys. If I had to pick the one drug that did the most for our operation, I'd pick nf-180." — Keith Langmo, Paynesville, Minn.

nf-180 for specific troubles:

"We shoot the 2-lb.-per-ton level of nf-180 to turkeys that are in stress period... sometimes even a 3-lb. level to straighten them out. And we use 4 lbs. of nf-180 per ton in treating blackhead." — Harold Kaufman, Wayland, Iowa.

"nf-180 is excellent against Salmonellas. It is definitely the treatment for enteritis. And nf-180 saves a few ulcers for me, too." — Keith Langmo

"In general, nf-180 helps control most diseases. If our birds have something and we don't know what it is, we try nf-180 first"— R. T. Maddox, Harrisonburg, Va.

Raising turkeys without nf-180:

"I'd hate to raise turkeys without it! I feel more relaxed . . . less helpless with nf-180 in my feed. There are a good many medications for the turkey industry, but I feel nf-180 is at the top."— Paul Bandel.

• • •

HOW TO SET UP AN nf-180 PROTECTIVE FEEDING PROGRAM

GROWING-FINISHING PERIOD . . . check your past history and local disease problems. Choose the protective feeding program you need:

• 2-lb. (100 grams furazolidone) level continuously should be used to protect against blackhead, hexamitiasis and other diseases.

• 1-lb. (50 grams furazolidone) level continuously gives wide protection against stress and many diseases where blackhead and hexamitiasis are not likely problems.

• Week-a-month plan for areas where disease is not a serious problem. Many growers report good results using a 2-lb. nf-180 stress feed (100 grams furazolidone) one week a month to clean up birds, fight stresses and knock out disease organisms before they can build up and trigger trouble.

TO TREAT SPECIFIC DISEASES . . . use a feed with a 2-4 lb. (100-200 grams furazolidone) level of nf-180. Refer to chart at left for proper level.

Why take chances with drugs that fight only one or two diseases? Use nf-180, the one drug . . . the only one . . . that offers wide-range effectiveness.

Protect birds — from poults to processor — with nf-180.

HESS & CLARK
Division of Vick Chemical Company
Ashland, Ohio

NT-6-4.

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

LOTS OF FIREMEN— BUT NO FIRE

★

VINELAND, N.J.—Eighty firemen participated recently in a simulated fire drill held by the Jacob Rubinoff Co. here, one of the largest independent feed mills in the Northeast.

The exercise was scheduled to "insure the preservation of life and property in and around the plant," according to Edward G. Rubinoff, president. The drill lasted 45 minutes during which time the plant was hosed by five pump trucks and one hook and ladder vehicle.

---

ingredients at lowest cost because the dealers buy the feed grain and the manufacturers buy the other ingredients. The premix system must pay most for its ingredients because the high cost of proteins to retailers much more than offsets the low cost of premix ingredients to the manufacturers.

Total Costs

The differences in total costs shown at the bottom of the accompanying table represent the cumulative effect of differences in the separate classes of costs. They summarize the final cost comparison among the four systems studied. But to understand the reasons why the comparisons come out as they do, one must go to the individual classes of costs as has been done here.

SUGARCANE LATE

WASHINGTON — The Louisiana sugarcane crop is reported to be about 30 days later than normal. Growth was reported to be 20-24 inches shorter in most areas due mainly to insufficient moisture, according to the U.S. Department of Agriculture. This would delay the fall planting and harvesting.

Geneticist Named By J. J. Warren

FOUNTAIN INN, S.C.—Clifford K. Darby has been named geneticist for J. J. Warren breeding operations at Greenville and Fountain Inn, S.C., it was announced by James J. Warren, Jr., general manager.

Mr. Darby has for many years been closely associated with breeding operations at Darby Leghorn Farm, Somerville, N.J., and more recently as assistant to Dr. Edward F. Godfrey, Warren geneticist.

The center of the J. J. Warren breeding program in the south is located at Fountain Inn, where a 150-acre farm houses about 20,000 breeders. Hatchery operations are located at Greenville.

In his new position, Mr. Darby will continue his work with the Darby DX Strain Cross, now being bred and produced by the J. J. Warren organization, as well as with the J. J. Warren Sex-Sal-Link and the Warren J-J's.

Merger of the Darby Leghorn Farm with J. J. Warren was announced in June.

GENETICIST NAMED—Dr. Edward F. Godfrey, left, geneticist for J. J. Warren, checks out breeding data with Clifford K. Darby, who has been named to head the firm's breeding program at Greenville and Fountain Inn, S.C. Mr. Darby will continue his work with the Darby DX Strain Cross, now part of the J. J. Warren operations.

'Stan Terrill Fund' Being Established

URBANA, ILL.—A group of professional colleagues and friends of the late Dr. Stanley Terrill are establishing a fund to further the education of the three Terrill children, it has been announced by Dr. H. M. Scott of the University of Illinois College of Agriculture.

Dr. Terrill, former head of the swine division, department of animal science, University of Illinois College of Agriculture, died July 23 at the age of 41 following a long illness.

Dr. Scott said that colleagues and friends of Dr. Terrill have asked him to coordinate the establishment of the fund, which would serve as an expression of appreciation for Dr. Terrill's contributions to the scientific field of agriculture.

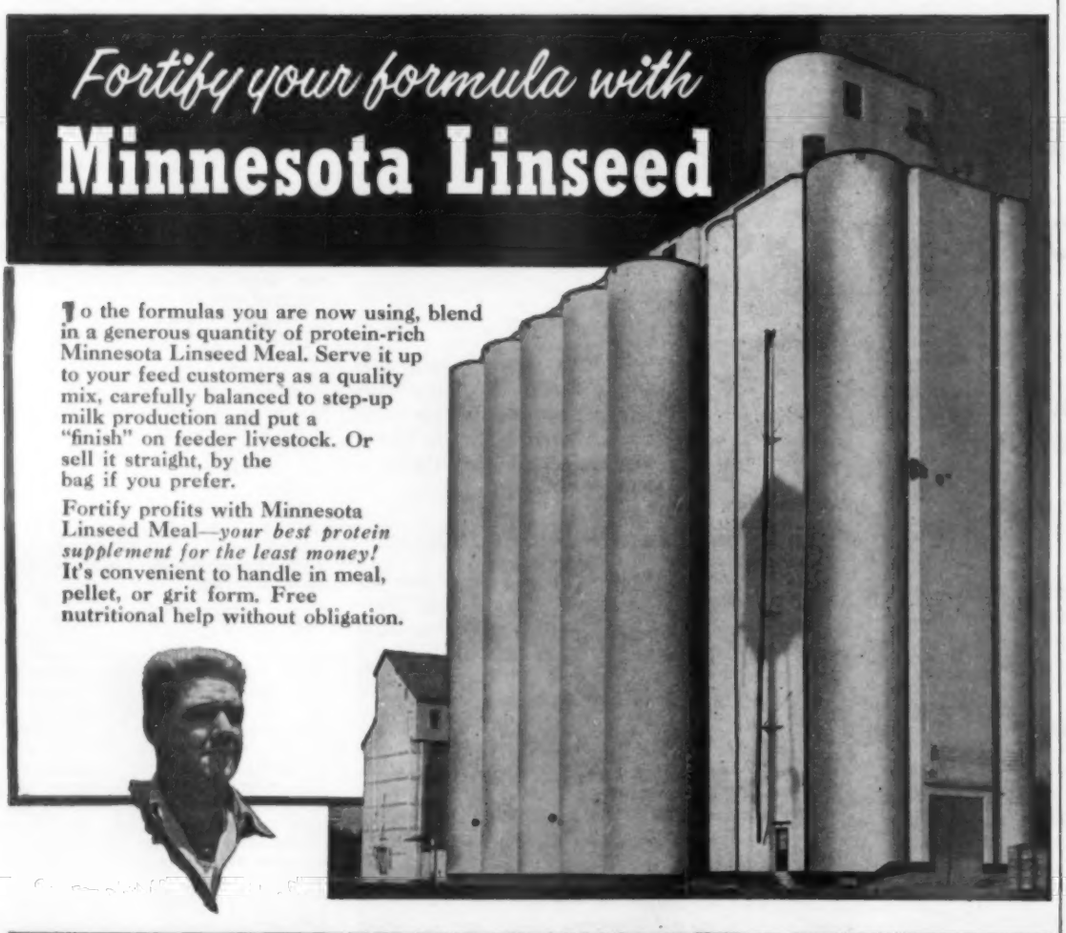
He said the fund would be made available to Mrs. Terrill for use in furthering the education of the three Terrill children, David Stanley, Marilyn Jean and Nancy Ann.

Contributions to the "Stan Terrill Fund" can be made through Dr. Scott's office, Room 321, Mumford Hall, University of Illinois College of Agriculture, Urbana, Ill.

Damages Granted

STATESVILLE, N.C. — The Star Milling Co. here has been granted $63,000 for damages and acquisition of right-of-way for the proposed widening of West Front St.

A consent judgment setting forth the settlement was filed by the State Highway Commission in Superior Court here July 28. The judgment requires that the company, currently building a new plant on the Taylorsville Road, be out of the existing plant by Oct. 1.


Fortify your formula with
Minnesota Linseed
To the formulas you are now using, blend in a generous quantity of protein-rich Minnesota Linseed Meal. Serve it up to your feed customers as a quality mix, carefully balanced to step-up milk production and put a "finish" on feeder livestock. Or sell it straight, by the bag if you prefer.
Fortify profits with Minnesota Linseed Meal—your best protein supplement for the least money! It's convenient to handle in meal, pellet, or grit form. Free nutritional help without obligation.

Write, wire or phone us your requirements . . .

Minnesota LINSEED OIL COMPANY

OUR 90th YEAR

MINNEAPOLIS 21, MINNESOTA • SUNSET 8-9011

Marion MIXERS

ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag!
One mixer For All Your Mixing Needs.
Mixes Both Dry and Molasses Feed.
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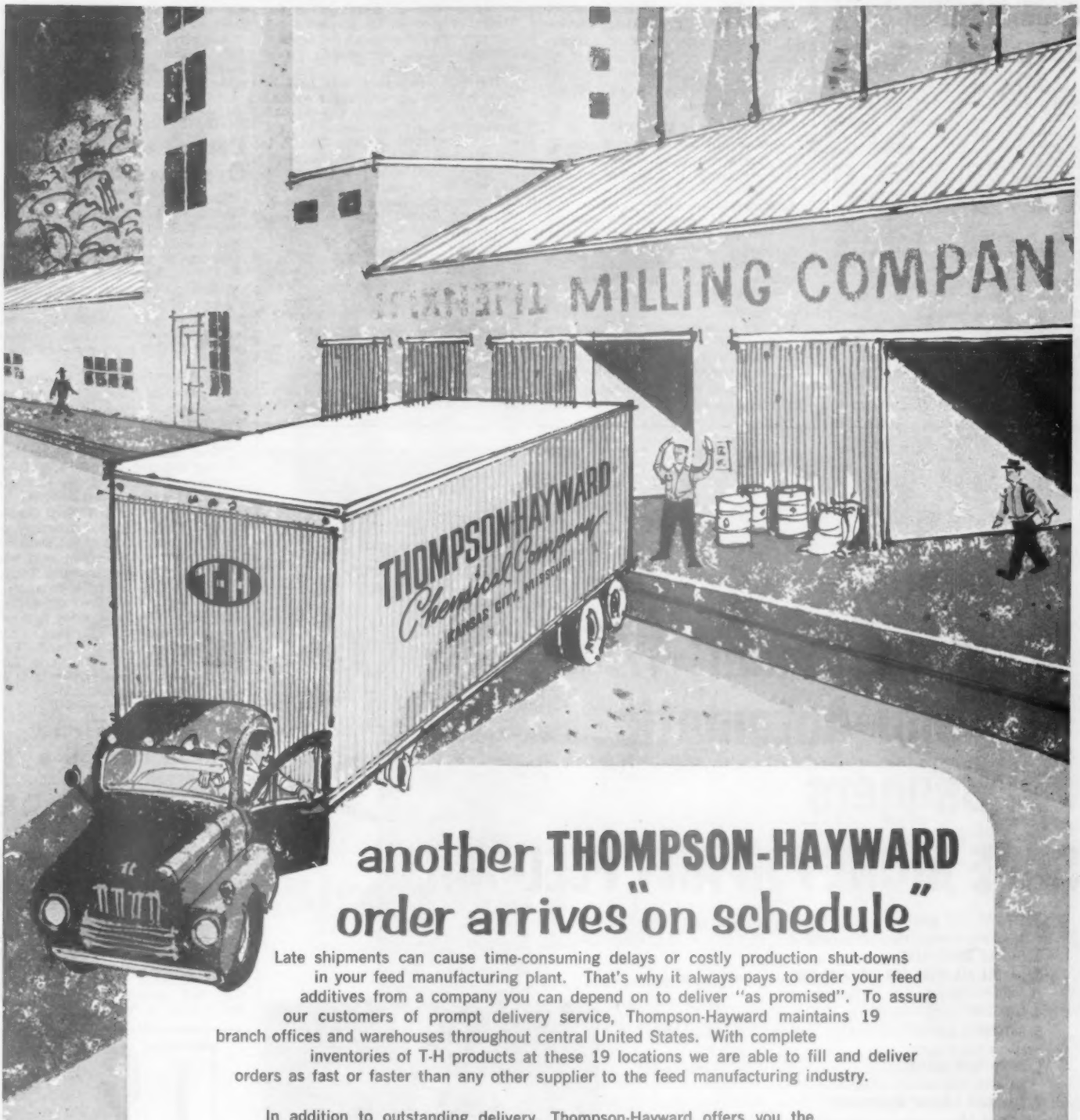

another THOMPSON-HAYWARD "order arrives on schedule"

Late shipments can cause time-consuming delays or costly production shut-downs in your feed manufacturing plant. That's why it always pays to order your feed additives from a company you can depend on to deliver "as promised". To assure our customers of prompt delivery service, Thompson-Hayward maintains 19 branch offices and warehouses throughout central United States. With complete inventories of T-H products at these 19 locations we are able to fill and deliver orders as fast or faster than any other supplier to the feed manufacturing industry.

In addition to outstanding delivery, Thompson-Hayward offers you the services of a large field representative staff. Thoroughly familiar with the local conditions, these men stand ready at all times to help you solve your feed additive problems. Several of our representatives are experts in the field of nutrition, and all of them have immediate access to our experienced nutritional staff in Kansas City. No matter what your nutritional problem, Thompson-Hayward will conscientiously strive to provide you a sound solution. For further information, write today.

THOMPSON-HAYWARD'S 19 BRANCH OFFICES:

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DALLAS
DAVENPORT
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MINNEAPOLIS
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OMAHA
SAN ANTONIO
SHREVEPORT
ST. LOUIS
TULSA
WICHITA
DES MOINES

T-H **THOMPSON-HAYWARD** *Chemical Company* 2915 Southwest Blvd. Kansas City, Mo.

Animal Nutrition Event Set in Spain

MADRID, SPAIN — Agricultural scientists and industry and government representatives from Europe and the U.S. will meet here, Oct. 19-21 for the Second International Symposium on Animal Nutrition, it was announced by Howard L. Roach, Waterloo, Iowa, president of the Soybean Council of America, sponsor of the event.

Mr. Roach said that George Strayer, executive director of the council, is presently in Europe making final plans for the symposium which will explore methods of improving animal nutrition. He is working with Javier de Salas, manager of the council's Madrid office; Dominic Marcello of the Italian office; William Luykx of the Benelux office and Fred R. Marti, director of overseas operations.

Participants in the Madrid symposium will be the agricultural attaches of the Foreign Agricultural Service of the U.S. Department of Agriculture as well as the agricultural directors of the International Cooperation Administration (I.C.A.) of the U.S. government.

"Key to Progress"

Commenting on the significance of the forthcoming symposium, Mr. Roach declared that animal agriculture is the key to economic progress. Animal agriculture, he explained, requires such things as refrigeration, modern forms of transportation and processing plants. Thus, improvements in animal agriculture act as a spur to over-all industrial and economic development.

"The Second International Symposium, by encouraging the exchange of information on animal agriculture problems, will greatly facilitate progress in other areas," Mr. Roach said.

Dr. James Hayward, head of the council's research division, has been named permanent secretary of the Madrid symposium. Dr. Hayward was formerly head of research for Archer-Daniels-Midland, Minneapolis feed company.

The first symposium was held in May, 1959, in the U.S. under council sponsorship. It brought together 29 representatives from Europe as well as a dozen U.S. experts. The U.S. meeting began with a three-day symposium in Washington, D.C., and was followed by a 10-day trip through the U.S. which included visits to private, state and federal research centers, universities and farms.

Sponsorship

Sponsorship of the international symposia is a part of the soybean council's responsibility in activating a 42-nation contract. This contract was signed by the council and the Foreign Agricultural Service this spring. It is the first such global contract ever executed and proposes to use, to the fullest extent possible, the authorization under Public Law 480 for the expansion of international markets for U.S. farm goods.

According to Mr. Roach, there is a $375 million market for American soybean products in 17 European, mid-eastern and Asian nations.

U.S. Feed Grains Council to Extend Overseas Markets

DES MOINES—With a budget of $80,000 to $100,000 the U.S. Feed Grains Council is planning to extend its overseas market for feed grains, according to announcement by Nelson Urban, Des Moines, council president, after a committee meeting here. Pledges of funds for the program came from feed manufacturers, hybrid seed corn and grain sorghum firms, grain exporters and corn growers.

Plans have been made to establish sales offices in Rome, Italy, another in northern Europe or the United Kingdom and a third in Japan, he said.

Those present for the committee meeting included: Walter Goeppinger of Boone, president of the National Corn Growers Assn. and newly elected president of the U.S. Feed Grains Council; Fred Maywald, manager of the grain department of the Farmers Grain Dealers Association of Iowa, and D. G. Nelson of Amarillo, Texas, executive secretary of the council.

The committees are proceeding with their plans for boosting feed export with assurance of backing by the department of agriculture and of financial backing through use of foreign currencies received from sale of farm surpluses.

By-Products Firm Tells of Promotion

LYNN CENTER, ILL. — Regal Packer By-Products Co. here has announced the promotion of Jack E. Conboy from assistant general manager to vice president.

Mr. Conboy joined the firm in 1956 and has been in the animal protein field since 1952, according to A. L. Rabiner, president of the firm.

BUYS ELEVATOR

AUDUBON, IOWA—The Manning Mill at Manning, Iowa, has purchased the Continental Grain Co. elevator here and named Robert Mohr of Grand Junction, Iowa, as manager.

7 Ways Richardson G-17 Semi-Automatic Baggers

SAVE MONEY IN ANY FEED MILL

1. **FIT ANY SIZE MILL**—as the main bagger for the small mill or the small-batch bagger for the larger mill.
2. **HANDLE MOST FEEDS**—grains, pellets, mashes.
3. **HANDLE ALL SIZES AND TYPES OF BAGS**—open-mouth textile or multi-wall paper—10 to 140 lb. capacities.
4. **LOW COST**—little more than an all-manual unit.
5. **AUTOMATIC CUT-OFF**—no time lost trimming... much faster than all-manual baggers.
6. **CONSISTENT ACCURACY**—eliminates human error... keeps profits out of the bag and in your pocket.
7. **COMPLETE LINE OF ACCESSORIES**
   - **Bagholders**—camgrip (shown); also manual and air-operated.
   - **Spouts**—quick-change square or oval in a range of sizes.
   - **Feeder**—increases speed and accuracy—permits handling flakes, lumpy, and sluggish materials.
   - **Counter**—registers bags filled.
   - **Portable Frame**—to serve several lines or spouts.
   - **Feeder Control Switch**—starts feeder when gate opens... stops it when gate closes.
   - **Dust Sleeves**—keep dust out of mill.

No mill can afford to be without this extremely versatile, semi-automatic, low-cost bagger. Operates on the gross weigher principle with the weighed material dropping directly into the bag instead of a weighing hopper. Adjustable weight on threaded rod tares out weights of different types of bags.

Operator starts operation by pulling down gate handle. Gate opens and is held open by a trigger. Material passes into bag. Feeding continues until pre-set weight is in bag when gate cuts off automatically.

Why not see how this Richardson Semi-Automatic Bagger can make money in your mill. Write or phone... today! **Richardson Scale Company, Clifton, New Jersey.**

Send for free bulletin.

Richardson

SALES AND SERVICE BRANCHES IN PRINCIPAL CITIES.
ALSO MANUFACTURED IN EUROPE TO U.S. STANDARDS
RICHARDSON SCALES CONFORM TO U.S. WEIGHTS AND MEASURES H-44

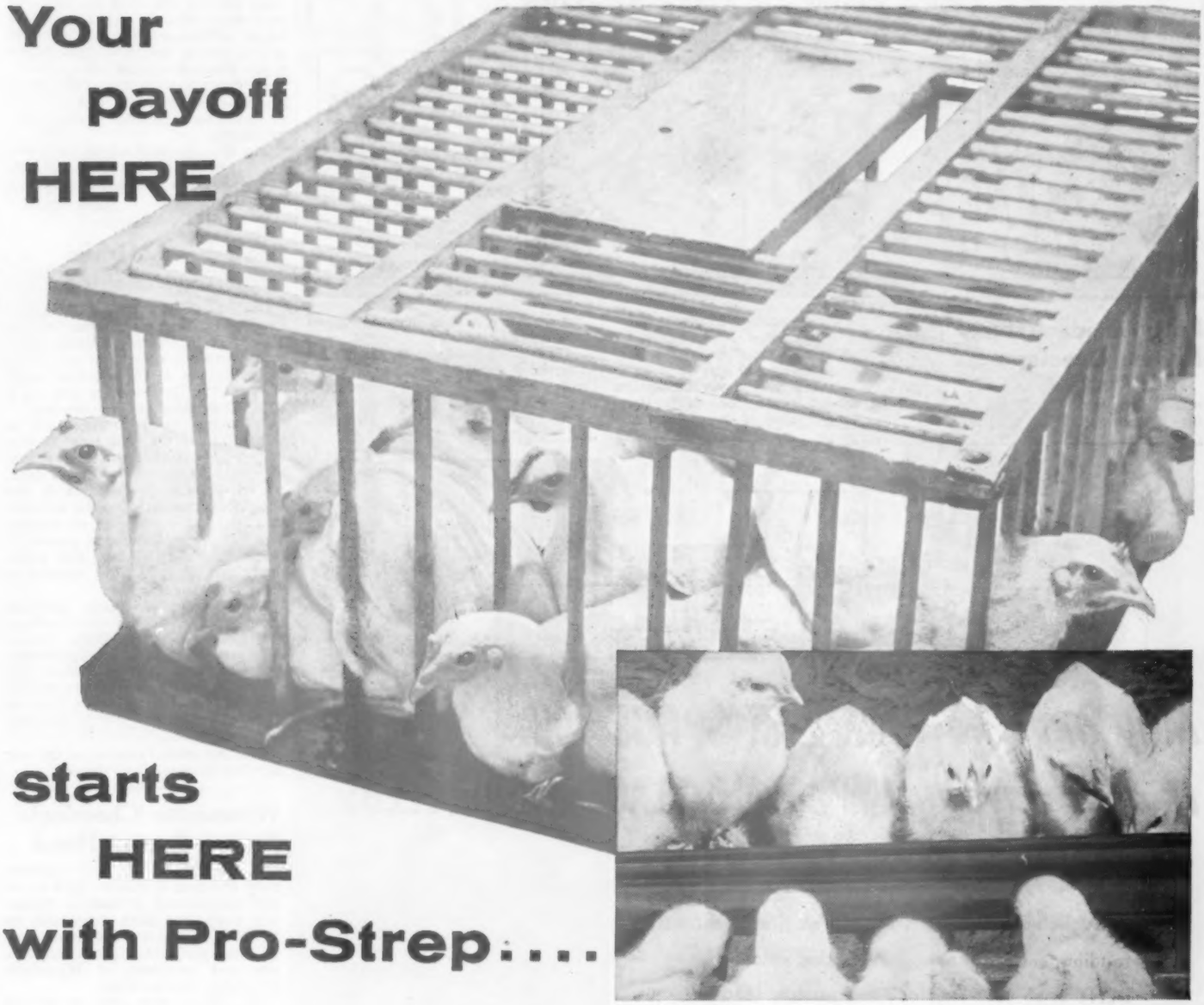
MATERIALS HANDLING BY WEIGHT SINCE 1902

CAN CAN BE CURED

More than one million Americans are living proof. Remember . . . your contributions helped save many of these lives. Your continuing contributions are needed to help discover new cures and, ultimately, the prevention of cancer itself • Remember, too, if you delay seeing your physician, you drastically cut your chances of cure. Annual checkups are the best way of detecting cancer in time • Guard your family! Fight cancer with a checkup and a check.

AMERICAN CANCER SOCIETY

Your payoff HERE



starts HERE with Pro-Strep....

To help broilers put on those *extra* weight gains that pay off at market time, give your prestarter and starter rations the *extra* protection of PRO-STREP.

PRO-STREP is a highly effective combination of penicillin and streptomycin that does more than sharpen appetites, stimulate growth and improve feed efficiency. It also helps prevent early mortality due to organisms sensitive to penicillin and streptomycin and maintains feed intake and weight gains even in the presence of C.R.D., nonspecific infectious enteritis and stress conditions. Best of all, PRO-STREP does it *more economically than any single antibiotic—narrow- or broad-spectrum!*

That's why more and more progressive feed mills throughout the country are switching to PRO-STREP. What *they* want is what *you* want—an effective combination of antibiotics that can promote growth and protect health at lower cost.

Ask your Merck Feed Products Representative about getting started on a year-'round program of PRO-STREP in your starter and grower rations. You'll find it pays off at market time!

Merck Chemical Division, Merck & Co., Inc., Rahway, N.J.

The Best Antibiotic Combination...

PRO-STREP®

Penicillin and Streptomycin

MERCK

®TRADEMARK OF MERCK & CO., INC., FOR AN ANTIBIOTIC FEED SUPPLEMENT

Latest Rulings in Labor Relations

MUST EMPLOYEES BE PAID FOR TIME SPENT SLEEPING ?

O.K., FELLOWS, LET'S KNOCK OFF AND SACK IN !
SURE THING, BOSS !
WE WEREN'T PAID FOR ALL NIGHT !
PAID FOR SLEEPING ?
THESE MEN WERE SLEEPING THOSE HOURS !
WE WEREN'T HOME, SO WE WERE ON THE JOB !
ARBITRATOR'S DECISION
NO, SLEEPING TIME IS NOT WORKING TIME
Based on a 1960 Texas Decision

Fatty Acids Affect Rumen Development

FORT COLLINS, COLO. — Research has pretty well established that certain fatty acids are responsible for starting rumen development in young calves. The acids, naturally present in the digestive system, are propionic, acetic and butyric.

But a Colorado State University experiment showed that deliberately introducing more of these acids into the digestive system does not speed this development.

Clyde Vair, graduate assistant with the dairy industry section of Colorado's experiment station, conducted the test with five groups of calves. Four groups got a normal calf ration of milk, hay and grain. In addition, one group received 10 grams of sodium acetate per head per day, fed in milk. A second group received 10 grams sodium propionate, a third 10 grams sodium butyrate. The fourth group received no additional acids.

All four lots were slaughtered after 35 days of testing. Mr. Vair reported no significant difference in rumen development.

The fifth group of calves, fed nothing but milk during the test period, showed very little rumen development when slaughtered.

Iowa Feed, Grain Firm Incorporates

OSKALOOSA, IOWA — Mahaska Feed & Grain Co. here has drafted articles of incorporation preparatory to constructing a building and starting operations at the southeast edge of the city. The business will be a $150,000 stockholders' corporation.

A building has been purchased to be used until the new building can be constructed. Construction is scheduled to get underway within 30 days.

Farmers and businessmen of the Oskaloosa area make up the corporation, with these serving as officers, Ben P. Groenendyk, Cedar, president; Ernest Blom, Oskaloosa, vice president; and H. B. McCoy, Oskaloosa, secretary-treasurer.

The corporation plans complete grain and feed service with facilities to handle grain banking, custom grinding and mixing, seed cleaning, grain merchandising and bulk feed delivery. Check-R-Mix equipment will be used with Purina concentrates to provide rations for poultry and livestock.

The first annual meeting of the new firm has been set for February.

Wyandotte Chemicals Names Export Head

WYANDOTTE, MICH. — Appointment of Lewis C. (Luke) Reid as export executive of Wyandotte Chemicals Corp. has been announced by Bert Cremers, vice president and general manager of Michigan Alkali Division and president of Wyandotte Chemicals International.

Mr. Reid's title will be general manager, Wyandotte Chemicals International and assistant to the general manager, Michigan Alkali Division—Export.

Mr. Reid comes from the Davison Chemical Division of W. R. Grace & Co., where he was president and director of Grace Electronic Chemicals, Inc. and vice president and director of International Metalloids, Inc. Before going to Grace & Co. in 1954, he was midwest district sales manager for Wyandotte.

DEHY

alfalfa and grasses

May have no **PLACE in SPACE, but**
It does have an **IMPORTANT PLACE in YOUR FEEDS**

TEST AFTER TEST at experiment stations throughout the country, as well as practical feeding results, have proved the value of DEHY in all your livestock and poultry feeds.

Lush, green alfalfa, processed by the latest scientific methods, is the feed ingredient with the "living look." Consider well its many known nutritional qualities, as well as the unknown growth promoting factors which science has not yet "pinned-down."

For a better, low cost POWER PRODUCER in all your feeds — use DEHY!

AMERICAN DEHYDRATORS ASSOCIATION
Board of Trade Building, Kansas City 5, Mo.

Write for FREE Report . . .

ADA American Dehydrators Association
PASTURE IN THE BAG

FOR Feeding OILS INGREDIENTS
Packing House By-Products
IVAN SCANLAN & CO.
6605 Lyndale Avenue So., MINNEAPOLIS 19, MINN.
TAYLOR 3-7253

OVERALL **OUTLOOK** on industry developments comes to you weekly . . . while it's still news in FEEDSTUFFS

SEE FOR YOURSELF

Is there a difference?

IT'S QUITE OBVIOUS, ISN'T IT?

One cow has had good care, good feed, and proper handling. The other, well there's one thing for certain, she's poor quality stock and not making a profit for her owner.

And so it is . . .

Only quality products make profits. It's true with Feed Ingredients, too. No one wants less than high quality feeds. It takes quality ingredients to make quality feeds —and Scotch-O-Lass Crumbles is the highest quality dry blackstrap molasses product. Quality is assured through constant laboratory analysis, continuous research and quality controlled production.

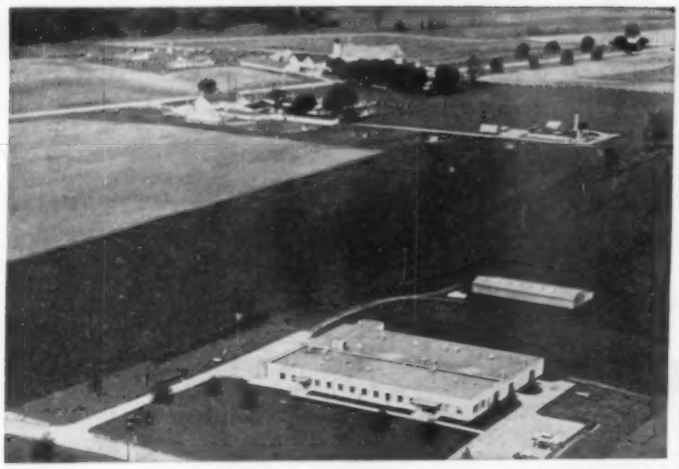
SEE FOR YOURSELF

There is a difference in SCOTCH-O-LASS CRUMBLES—

The Product You Buy with Confidence and Sell with Pride

VY LACTOS LABORATORIES

1901 E. EUCLID AVE. DES MOINES 13, IOWA



RESEARCH FARM—In the foreground is the new feed additives laboratory of the Hess & Clark research farm near Ashland, Ohio. Directly behind the laboratory is the large animal feeding unit. And in the right background is the isolation laboratory. Other buildings in the background include an administration building and swine breeding and dairy units.

Hess & Clark Dedicates Additives Lab

ASHLAND, OHIO — A new feed additives laboratory at the Hess & Clark research farm was dedicated here Aug. 3 by company officials before a large group of state and local officials, university and commercial scientists and editors of farm publications.

Dr. P. D. Harwood

The new structure was formally opened by Dr. Paul D. Harwood, vice president and director of research of Hess & Clark, after which the visitors toured all the facilities of the expanding research farm.

Dr. Harwood dedicated the recently completed laboratory to "the scientific search for truth . . . and to the laws and principles of observational biology." The multi-purpose building was designed for the study of the relationship and interaction of feed additive drugs to ordinary nutrients; the metabolites derived from these drugs; combinations of commonly used feed additives, such as the nitrofurans, antibiotics, hormones, enzymes, etc., and the performance and productivity of animals receiving these additives.

The unit houses radio-isotope laboratories, battery pens, sterilizing and mixing rooms, large broiler and layer sections and an egg-handling area in addition to offices, conference room and library. In it can be conducted screening studies, practical floor pen trials on young birds, turkey growth tests, floor pen tests with layers and miscellaneous animal trials. Associated structures will permit pig, calf, fattening cattle and sheep studies.

Dr. Harwood told the group that "applied biology and medicine have provided great blessings to mankind," and pledged Hess & Clark to work in that tradition "while striving to remove those restrictions which obstruct research."

Notes Great Strides

Frank N. Getman, chairman of Hess & Clark and vice president of Vick Chemical Co., pointed to the great strides made in human medicine toward reducing or virtually eliminating mortality from some of man's major disease problems and stated that the improvement in the health and performance of poultry and livestock has kept pace and, in many instances, exceeded the progress in human medicine.

"A new era of disease protection and animal health began a little over 10 years ago when the idea of medicating animals through their feed was developed," he said. "Animal health research is as exhaustive and painstaking as any done in the human field. Every day consumers reap the benefit of it from the price of meat—and of poultry, in particular—in the butcher shop and in the supermarket.

"None of these advances would have been possible without brilliant research; without the dedicated efforts of our scientists. We of the drug industry recognize this fact as we spend nearly eight times as much on research as the general industry average, and the amount we are spending today is double what it was four years ago. Here at Hess & Clark alone our research expenditures in the last five years have increased twelve fold."

As evidence of Hess & Clark's emphasis on research, Mr. Getman announced that the company is developing layouts and plans for a new biological laboratory for expansion of efforts in parasitology, bacteriology and biology. Construction of this laboratory will begin in 1960, as will an additional experimental broiler house with a capacity of 3,000 birds.

"During the last two years," Mr. Getman noted, "our federal government has set up serious roadblocks in the path of this progress. These are roadblocks which must be, and which we will, overcome. No one is more interested in improving and in preserving the health of the people in our nation than are those of us in the Vick family of companies. Our livelihood depends on it.

"To this extent, we are in complete agreement with the objective of both the Congress of the U.S. and the administration of our federal government," he said. "On the other hand, we disagree vigorously with the approach taken to achieve the objective. In my opinion, the government's approach is based solely on fear of an unknown and not at all upon realistic practicality based on scientific evidence."

Principal speaker at the luncheon following the tour was Dr. Roy M. Kottman, dean of the college of agriculture at Ohio State University.

Dr. Kottman listed four challenges facing land-grant colleges of agriculture in the '60's as: Getting the public to understand the full meaning of agriculture; getting across to parents and prospective students the career opportunities which exist in "agribusiness"; getting the public to really understand the whole matter of agricultural surpluses, and being bold enough in colleges of agriculture in thinking to plan the kind of laboratories, teaching programs and instrumentation to serve the complex firms making up agri-business.

RESEARCH CHIEF—Dr. James E. Briggs, Hess & Clark chief of nutritional research, adjusts a knob preparatory to taking a reading on radio-isotopic equipment in the new feed additives laboratory of the company's research farm.

Milwaukee Protests Rate Reduction Bid On Grain to Gulf

MILWAUKEE, WIS. — The Milwaukee Association of Commerce has formally protested to the Interstate Commerce Commission against rate reductions asked by railroads carrying grain from the Midwest to ports on the Gulf of Mexico.

Such reductions, the association said, would divert grain tonnage from the St. Lawrence Seaway, where it "rightfully belongs," and would substantially reduce Milwaukee's chances of becoming a major grain exporting port.

Harold E. Gawlick, manager of the association's transportation division, said the proposed reduction would permit the movement of grain to Gulf ports for export at a 10¢ to 13½¢ reduced rate, "and the local processor, concerned mostly with domestic trade, will be unable to attract this grain to Milwaukee unless a premium price is offered."

The reductions would also be harmful to Milwaukee grain elevators and stevedoring firms, who have made adjustments to handle export grain shipments, Mr. Gawlick said. He added that a lack of grain could stifle foreign trade here, since many ships that depend on grain for a "bottom cargo" will stay away from a port unable to furnish the grain.

Railroads asking for the rate reductions include the Kansas City Southern; Missouri Pacific; Gulf, Mobile & Ohio and the Illinois Central. The same railroads had protested a reduction asked by the Chicago and North Western and the Milwaukee Road, which ship grain to Lake Michigan ports from Kansas, Nebraska and Iowa. However, the ICC approved a 5½¢ reduction per 100 lb. to 27¢, which became effective last Jan. 25 on shipments to Milwaukee, Chicago, Duluth, Superior, Green Bay and Manitowoc.

Started Grain Shipping

With the rate reductions, some 651,000 bu. of grain have been shipped from Milwaukee so far this year, compared with none in 1959, according to Dennis Oliver, grain merchant at Cargill, Inc., here.

In the association protest, Mr. Gawlick noted that the four railroads want to reduce their rates because of increasing competition from Mississippi River barges, which also ship grain to Gulf coast ports.

He asserted that "railroads certainly cannot operate at a profit if they reduce their rates to the barge level . . . how can they meet their out-of-pocket costs, and further, what will preclude the barge operators from reducing the barge rates and again widening the spread between barge and rail rates?"

California Adopts Residue Tolerances

SACRAMENTO, CAL.—Additional tolerances limiting pesticidal residues in produce have been adopted, effective Aug. 29, by the California Department of Agriculture in an effort to assure more protection to consumers.

In general, they bring California pesticidal requirements into conformity with the Food and Drug Administration requirements.

Adopted after thorough discussion in a public hearing, the new regulations permit no pesticide residues in milk and cream. In order to aid the dairy industry to conform to this requirement, the regulations permit no more than 0.5 of a part per million of DDT on hay and other produce sold for dairy feed.

William E. Warne, director of agriculture, said that competent technical testimony at the hearing showed that below one-half part per million of DDT on hay will not produce any residue in milk of dairy animals to which it is fed. He added that the department's official test method had proved this and that the department plans to publish details concerning its official test method so that other laboratories may be guided by it.

Diamond Alkali Sales, Net Income Hit Peaks

CLEVELAND, OHIO — Diamond Alkali Co. sales and net income established record levels for both the second quarter and the first half of 1960, the firm reports in a statement to shareowners.

Sales were $71,542,455, an increase of 8% from the same six-month period last year, Raymond F. Evans, chairman and president, says. Net income amounted to $6,374,303 or $2.19 a share, an increase of 23% from the like period of 1959.

Second quarter sales, the highest for any quarter in the firm's history, totaled $38,550,666, an increase of 7% from the previous year. Earnings for this three-month period were $3,506,783 or $1.20 a share, compared to $3,075,662 reported for the similar period of 1959.

"Indications are that the demand for our products will continue at a high level for the coming months and our earnings for the full year should reach record levels," Mr. Evans reports.

PLAQUE — General Mills, Inc., a longstanding Poultry & Egg National Board member, has agreed to the PENB 1¢ a case program on all eggs produced on its own production program. In recognition, K. K. Heideman (left) PENB director of finance and membership, presents a membership plaque to R. M. Hendrickson (center), marketing manager, poultry feeds, General Mills, and chairman of the PENB new products development steering committee, while Howard B. Herron (right), General Mills director of sales, watches approvingly. Presentation was made at the APHF convention in Memphis. General Mills has been active in PENB financing programs for a number of years.

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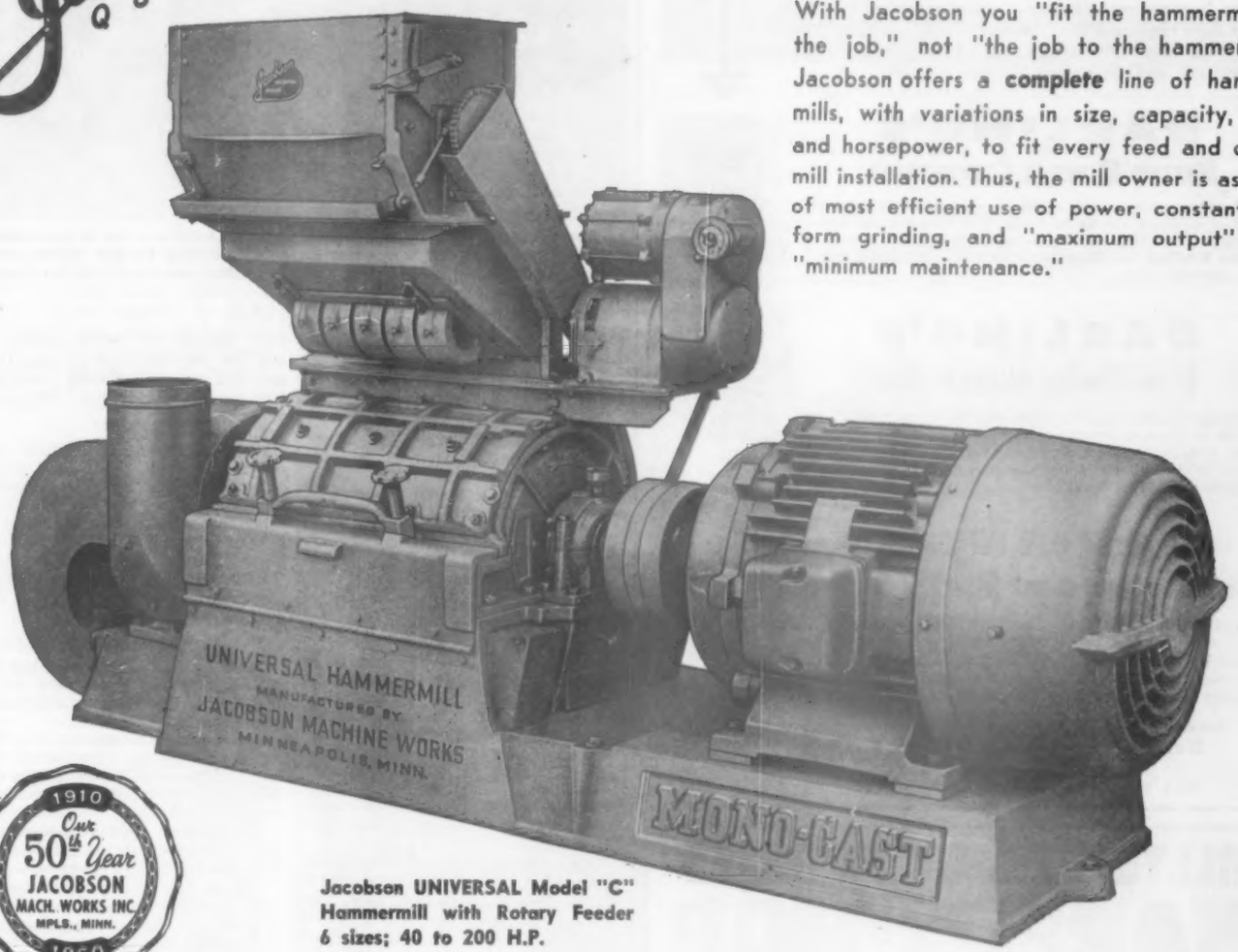
With Jacobson you "fit the hammermill to the job," not "the job to the hammermill." Jacobson offers a **complete** line of hammermills, with variations in size, capacity, style and horsepower, to fit every feed and cereal mill installation. Thus, the mill owner is assured of most efficient use of power, constant uniform grinding, and "maximum output" with "minimum maintenance."



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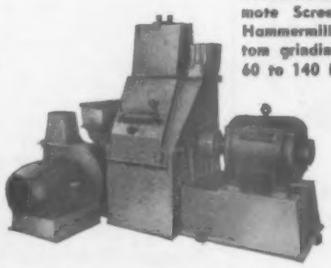
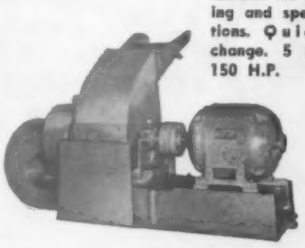
Jacobson UNIVERSAL Model "C" Hammermill with Rotary Feeder 6 sizes; 40 to 200 H.P.

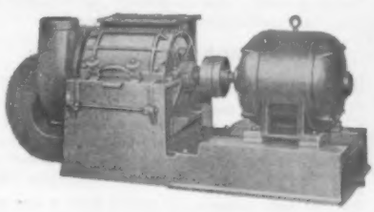
Jacobson AJACS-O-MATIC Remote Screen Change Hammermill. 4 sizes; 50 to 160 H.P.



Jacobson MASTER Remote Screen Change Hammermill for custom grinding. 3 sizes; 60 to 140 H.P.



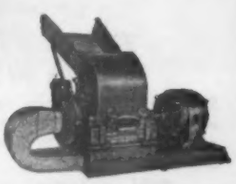
Jacobson AJACS Hammermill for custom grinding and special applications. Quick screen change. 5 sizes; 20 to 150 H.P.



Jacobson UNIVERSAL "Junior" Hammermill. 3 sizes; 10 to 50 H.P.

Jacobson AJACS Model "T" Hammermill. 4 sizes; 20 to 100 H.P.

Jacobson PULVERATOR for moderate grinding capacity or finishing dry products. 5 sizes; ¾ to 15 H.P.



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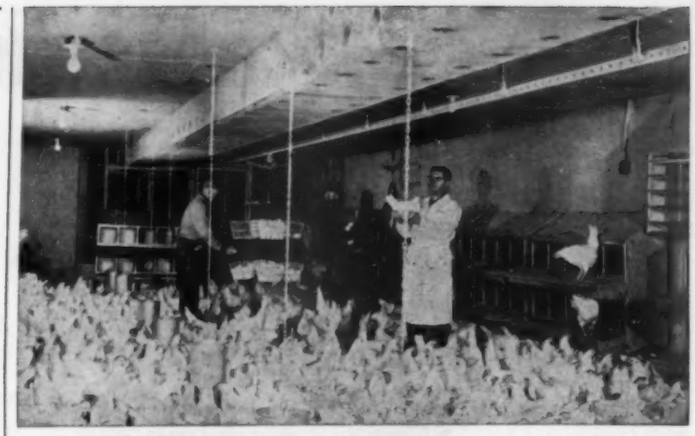


LIGHT RATIONING—Techniques indicating a 45.8% increase in cash income from egg production were reported at the 49th annual Poultry Science Assn. meeting by Manfred F. Lawatsch (right), poultry nutritionist at the Cargill-Nutrena research farm, Elk River, Minn.

Light Rationing Ups Egg Income

ELK RIVER, MINN. — A 45.8% rise in cash income from egg production has been reported from experiments conducted by Manfred F. Lawatsch, poultry nutritionist at the Cargill-Nutrena research farm, Elk River, Minn.

Mr. Lawatsch revealed his test results at the 49th annual meeting of the Poultry Science Assn. at the University of California College of Agriculture, Davis. He said two year-long tests, believed to be the first such full-scale studies of the economics of controlled lighting for laying flocks, proved that optimum quantities of light are basic to efficient egg output. Light "rationed" hens returned a net income of $1.67 per bird compared with $1.15 for normally lighted hens, produced 10.8% more eggs and consumed 6% less feed per dozen eggs produced.

The scientist's treatise traced the commercial use of controlled artificial lighting for hens since 1917. The process increases the "daylight" hours of a laying flock during the productive portion of a hen's life and is accepted as a means of increasing egg volume, he said.

Different Conditions

The researcher reported that the Cargill-Nutrena light rationing experiments differed from others in that his test group received only six hours of light daily from 9 to 20 weeks of age, then 18-minute increases each week for the next 52 weeks. The "control" flock, under more conventional lighting, received 12 hours daily from 8 to 20 weeks and 14 hours daily through the laying period. He said the tests recorded all aspects of cost and income including mortality, feed consumed, electricity, sale value of hens, etc.

Mr. Lawatsch said:

Birds under normal lighting were still laying small, relatively unprofitable "pullet" eggs when they reached top production at about 25 weeks, some five weeks after beginning to lay. In contrast, light rationed birds required more time—about 29 weeks—to hit their peak, but laid larger, more marketable eggs at higher production levels.

251-Egg Average

The average light-rationed hen laid 251 eggs in her production life — 10.8% more than her normally-lighted counterpart.

Large, premium eggs made up 93% of the rationed bird's production. She laid 21% more of them than the normal bird, which laid more small and medium-sized eggs.

The rationed flock consumed more total feed per bird, but 6% less feed for each dozen eggs produced.

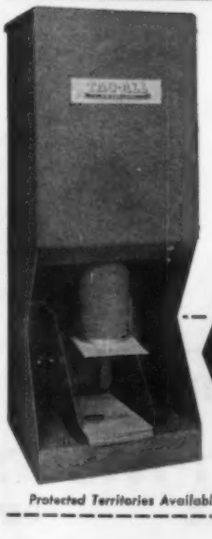
The rationed birds suffered a slightly higher mortality rate because of greater strain from production, but this factor was compensated for in the eventual sale value of the hens by the fact that the remainder had attained heavier weights.

The average light-rationed bird returned a net income of $1.67 compared with $1.15 for the normal hen.

FEED STORE OWNER DIES

WHITE HALL, ILL.—William McCarthy, 62, operator of the McCarthy Feed Store for 12 years, died at White Hall Hospital. A resident here since 1920, he had been a member of the city council for eight years.

TAG-ALL TRIMS TAGGING TIME



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Missouri Swine Day Planned Sept. 2

COLUMBIA, MO.—A specialist on size of swine operations will be guest speaker as the University of Missouri Swine Day here Sept. 2.

R. H. Bauman, agricultural economist at Purdue University, will discuss "How Big Should a Swine Operation Be?" He has done research on costs of production and how these costs are affected by size and efficiency of the operation.

The morning session of the Swine Day program will start at 9:30 in the university's Livestock Pavilion. The afternoon session will be in Jesse Auditorium, starting at 1.

Another program feature will be reports on swine research being conducted by the university's animal husbandry department. Included will be reports on protein supplements for growing-fattening swine, effect of feeding and management on brood sow performance, selecting breeding stock by back fat measurements and using ultrasonic methods of measuring meatiness.

Winding up the program will be a discussion of current problems in swine management by Dr. Leland Tribble, researcher in charge of the university's swine work.

Producers attending the Swine Day program will be on hand for the Missouri Swine Testing Station boar sale to be held that evening. From 60 to 70 boars of six breeds will be sold at auction in the Livestock Pavilion.

Wayne Feed Plant Manager Named

CHICAGO — Promotion of W. T. Browney, assistant plant manager at the Wayne Feed Plant at Portsmouth, Va., for 13 years, to the position of manager has been announced by Allied Mills, Inc. He will take the place of F. H. Shelby, who is retiring, F. H. Blough, vice president in charge of manufacturing, Allied Mills, Inc., announced.

W. T. Browney

Mr. Browney is a native of North Carolina, and after attending Norfolk College, came with Allied Mills in 1935. He had experience in almost all phases of plant operation prior to being promoted to the position of manager.

Mr. Shelby, who gained his early experience in the grain and feed business in Indiana, took over the management of the Portsmouth plant for Allied Mills when it was constructed in 1933. For many years he operated a soybean extraction plant in addition to the feed plant.

Work on Egg Center In South Dakota Done

MOBRIDGE, S.D.—James L. Jackson, hog buyer and seed corn dealer here, has recently completed his Bridge City Egg Center, adjacent to his stockyards east of the city.

Although construction was completed two weeks ago, full egg production will not begin until late fall, he said.

He set up the 40 by 120-ft. combination laying house, work room and egg storage coolers. Presently, the laying house portion of the building is serving as a brooder house for 4,000 chicks which will constitute the first laying flock.

In addition to producing eggs himself, Mr. Jackson plans to handle eggs through his set-in facilities from area farmers who can qualify for the quality market as well as cash buying lower grades to be shipped to the current receipt market.

Cattle Numbers Up 3.5% in Canada

OTTAWA, CANADA—Number of cattle and calves on farms in Canada increased almost 3.5% to 11,501,000 head June 1, compared with the estimated total of 11,120,000 June 1, 1959. An increase of 3.6% in western Canada, almost entirely in beef cattle, was more pronounced than in the east (3.1%) where an increase also occurred in dairy cattle.

Sheep and lambs on farms were estimated at 1,773,000 head June 1 this year up 1% from the June, 1959, total. An increase of 7% in the west more than offset a decrease of 6% in the east. The trend of decreasing horse numbers continued and, at 571,500 head, the number on farms June 1 this year was about 8% below the estimate of 614,000 a year ago.

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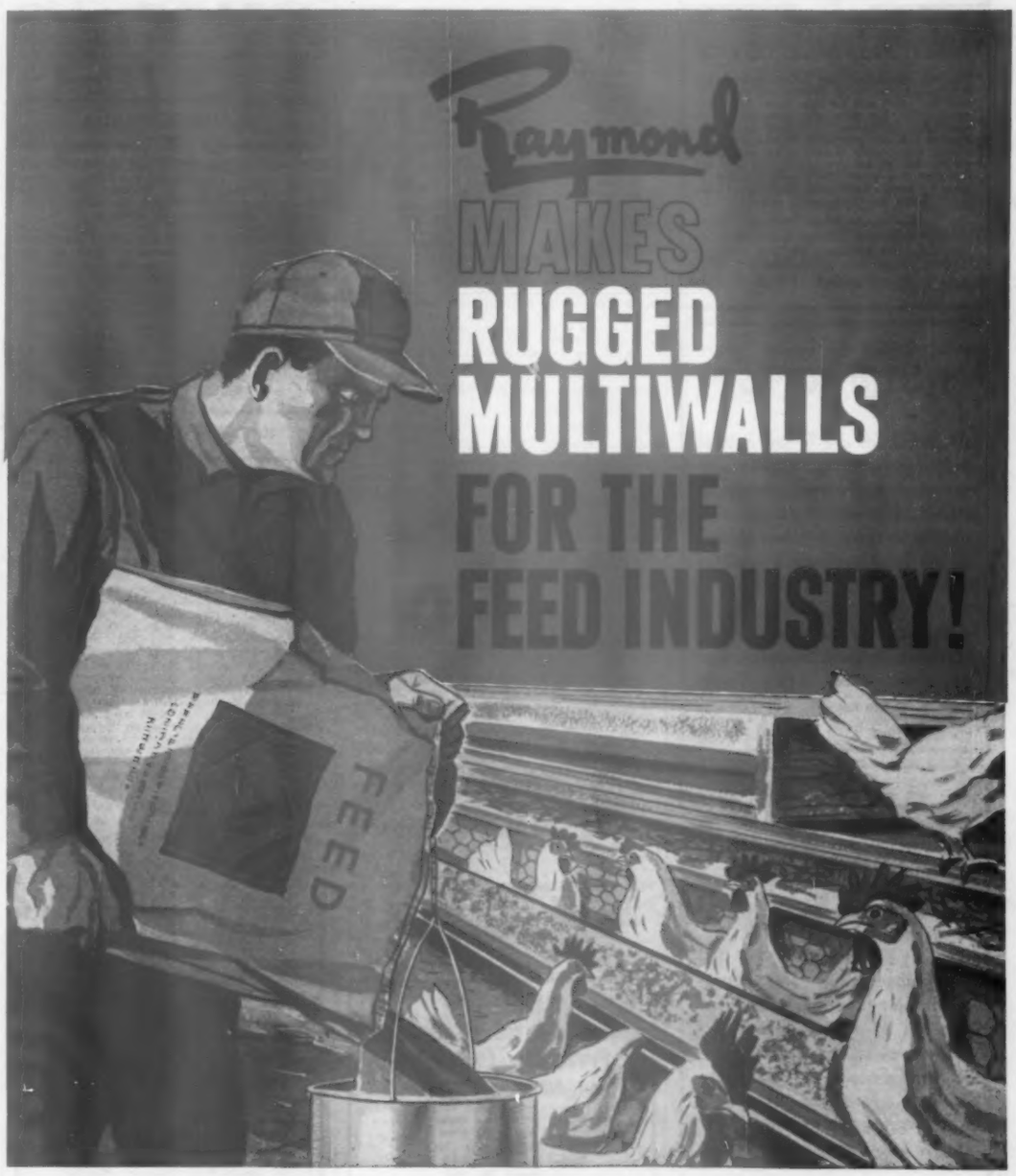

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Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 20¢ per word; minimum charge $3.00. Situations wanted, 15¢ a word; $2.25 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $13.00 per column inch. No discount on ads ordered for more than one insertion.
All Want Ads cash with order.

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ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANTED — GOOD USED BULK TRUCK, either combination or hopper type. Ed Ferguson, Delta, Iowa.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo

HELP WANTED

TURKEY FEED SALES SERVICE

We are expanding our turkey feed sales territories and need several experienced men for sales and service work. Excellent opportunity for men who are willing to specialize in turkey work and who can assume full responsibility for flock supervision. Guaranteed salary draw with provisions for annual bonus. If you are interested in a great future with the fastest growing feed company in the Upper Midwest, write for information today.

Supersweet Feeds Division
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Attention: T. H. Hanson

NUTRITIONIST

At least an M.S. in animal nutrition with several years' industry experience. Man in mid-thirties with the desire and ability to grow in other phases of the feed business, as well as nutrition, preferred. We are a medium-sized, mid-western mill selling a long established quality brand. Send complete resume to ad No. 6173, Feedstuffs, Minneapolis 40, Minn.

FEED INGREDIENT SALESMAN

Experienced salesman to represent major feed ingredient supplier in Middle Atlantic and Northeastern States. Age 30-35. Extensive travel. Established, aggressive company. Address ad No. 6168, Feedstuffs, Minneapolis 40, Minn.

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ASSISTANT SALES MANAGER WITH OPportunity to become sales manager with food manufacturer located in central states. Address Ad No. 6117, Feedstuffs, Minneapolis 40, Minn.

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TWO CHAMPION MOBILE MILLS — ONE 1956 with horizontal mixer mounted on 1956 Ford. One 1958 model with vertical mixer mounted on GMC truck. Excellent condition. Will sell cheap. Contact Blue Chip Milling Co., Brookfield, Mo.

FOR SALE—ENCLOSED MOTORS; RICHardson scale; truck scales; hammermills; cot crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE—LIKE NEW USED DAFFIN Mobile Feed unit. 1958 Chev. truck, Sparton series, five speed, dual rear, 21,000 miles. Includes molasses equipment, air unloading, mechanical auger, many extras. $11,500 on terms. Contact at once. Mechanically guaranteed. D. G. Wells, 314 Jordan Road, DePere, Wis.

FOR SALE—DAVENPORT 8 FT. BY 60 FT. rotary dryers, welded, complete. Sturtevant No. 9, 150 cu. ft. rotary batch blender, unused. Allis-Chalmers "Nordyke" roller mills, 10x36, 16x42, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

ONE TRIUMPH MODEL NO. 900 SHELLer, V-drive, and 25 h.p. motor, 24'x16" pit screw with varispeed motor drive, new, never installed. List price $3,565. Will take $2,695. In warranty. Address Ad No. 6187, Feedstuffs, Minneapolis 40, Minn.

ONE MODEL NO. 100 TRIUMPH CORN sheller, rebuilt, $325; 1 model No. 300 Triumph corn sheller, rebuilt, $695; 1 one ton Haines feed mixer, rebuilt, $395; 1 five ton Thoro-Speed feed mixer, new, $1,500; 1 fully rebuilt Kelly hammermill 60 h.p. main motor, 25 h.p. blower motor, all TEFC with new machine warranty, $2,150. Address Ad No. 6138, Feedstuffs, Minneapolis 40, Minn.

ALL KINDS OF GOOD USED MACHINERY. Addresses furnished. Box 86, Leola, Pa.

FOR SALE—MOBILE MILL, IOWA HAMmermill, Art's Way mixer, 1957 Dodge truck. Good condition. Purchased new mill reason for selling. Priced right. Nielsen Feed & Milling, Laurens, Iowa.

DAFFIN MOBILE MILL MOUNTED ON 1958 Ford. Cash or terms. Mill located at Colo, Iowa. Clyde Hatfield, Box 86, Clewiston, Florida. Ph. Tucon 2-5101.

FOR SALE—1956 DAFFIN MOBILE MILL on Chevrolet with 37,000 miles. Diesel has 2,500 hours. Has sheller attachment. Owner operated. Excellent condition. Vassar Vancil, Amboy, Illinois.

FOR SALE—USED 12 FT. HYTROL BAG conveyor. Chantland Manufacturing Co., Humboldt, Iowa.

SCALE—40 TON, 40 FEET CONCRETE deck. Elm Grove Fuel & Supply Co., Elm Grove, Wis.

FOR SALE—1958 SIMONSEN STEEL COMbination bulk and sack feed body. 13 feet inside length, 390 cu. ft., 7.8 tons, 3 straps with a wood floor. Is in excellent condition and priced to sell. Contact Park Lane Feeds, Inc., Freeman, South Dakota.

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NEW & USED
Scales, Hammermills, Feed Mixers, Sewing Machines, Elevators, Pellet Mills, and Grain Cleaners
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FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout. 5 H.P. motor drive. Address Ad No. 2479, Feedstuffs, Minneapolis 40, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

FOR SALE—20" IOWA MILL, MOUNTED on 1957 2-ton truck powered by GMC diesel, 2-ton horizontal mixer and molasses blending equipment. Moores Manufacturing Co., Windom, Minn.

ONE 36-IN. ATTRITION MILL; 5-TON EUreka horizontal mixer with silent chain drive and 40 H.P. motor. J. E. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

BARLEY PEARLER—STRONG SCOTT NO. 350. New machine guarantee. First $85 takes it. C. J. Basten, New Franken, Wis.

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FOR SALE — FEED AND FERTILIZER plant in western New York State. Bulk bins and handling equipment, railroad siding, room for expansion. Pictures on request. Address Ad No. 6155, Feedstuffs, Minneapolis 40, Minn.

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FOR SALE OR RENT—GOING COMMERcial egg poultry farm with cage laying houses, in suburban 36 acre property with two story brick house, swimming pool, orange grove. Write P.O. Box 104, Monterrey, Mexico.

START WORKING FOR YOURSELF. YOU can acquire this business through profits you will make. Will sell or lease, good going, long established feed mill and grain business, which is now and always has been a real moneymaker. Property consists of two grain elevators interconnected with capacity of 75,000 bushels, feed mill and warehouses, etc. Under same management for 30 years. Don't answer unless you have ambition to own your own business. Write Ad No. 6191, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—FEED STORE IN WESTERN Wisconsin. Feed, seeds and fertilizer. Address Ad No. 6192, Feedstuffs, Minneapolis 40, Minn.

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Hamburg (Germany) Freeport

Ideal for import, storage and manufacture to serve European Common Market and other world markets. Presently equipped for feedstuff processing, but suitable for conversion to any type of manufacture or warehousing. Plant area: 65,000 sq. ft.; buildings 55,000 sq. ft., including mill, warehouses, offices and living quarters; rail spur; 500 ft. wharf. Address Ad No. 6183, Feedstuffs, Minneapolis 40, Minn.

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Says Family Farm Will Stay Dominant

AMES, IOWA—Family farms of 1975 will be even more specialized than at present, but they will continue to dominate most types of farming, a U.S. Department of Agriculture economist predicted recently.

The average size of family farms will continue to increase and the total number of farms will decrease, H. L. Stewart of USDA's Agricultural Research Service told the annual meeting of the American Farm Economics Assn. in Ames.

He foresaw an increase in the present trend on farms to adopt labor-saving and output-increasing improvements essential to economic survival in competitive farming.

More Services

Farmers of 1975 will employ others to perform more services formerly performed by farm operators themselves, Mr. Stewart said. Among these new services he listed increases in spraying, dusting and fertilizing and more professional management assistance and help in buying and marketing livestock.

Large-scale livestock feeding, Mr. Stewart predicted, will become increasingly important in the West and Southwest, where there are both expanding markets and abundant supplies of livestock, feed grain and forage. In these regions, however, development of feeding enterprises will be held in check somewhat by managerial limitations and associated risks and uncertainties.

Organization Trends

Cattle ranch organization will probably change less in the next 15 years than livestock farms in the Corn Belt, Mr. Stewart said, because they are already highly specialized and have very few production alternatives open to them.

No drastic change in the organization and management of dairy farms seems likely by 1975, according to Mr. Stewart. The size of dairy herds will continue to increase, but various economic studies suggest that efficient family-sized operations can compete with larger farms. One study which he cited showed a leveling-out of labor savings per cow when the herd reaches a size of 35 to 40 animals.

Cash crop farms of 1975 will be affected primarily by the restrictions imposed on them by market demand and associated production-control programs and by risk and uncertainty, Mr. Stewart predicted. This will be especially true of wheat farms where both demand and production alternatives are limited and yield uncertainties are extreme.

Mechanization has greatly increased the size of the crop farm which a family can handle, Mr. Stewart agreed, but opportunities are limited to achieve major reductions in production costs beyond those possible with a balanced "line" of mechanized equipment.

More Dried Eggs Purchased by USDA

WASHINGTON—The U.S. Department of Agriculture has announced purchase of 807,300 lb. of dried whole egg solids at a cost of $921,300. The eggs will be delivered to states for distribution to needy persons and other eligible outlets.

The price paid was $1.1425 lb. for carload lots of egg solids packed in No. 2½ consumer-size cans. USDA accepted bids from all of the 10 bidders who together offered 1,076,400 lb.

These purchases bring total purchases to 4,866,225 lb. at a cost of $5,545,000 since resumption of the program June 22. Section 32 surplus removal funds finance the program.

Instructions on Grinding, Exchange Of Grain Issued by Canadian Board

OTTAWA, CANADA—The Canadian Wheat Board issued instructions to the trade Aug. 3 regarding grinding of grain for feed and the exchange of grain for prepared feeds in the 1960-61 crop year. The instructions were in two parts, the first deals with custom grinding of grain for feed and the second with the exchange of grain for prepared feeds. The details follow:

Part 1—Effective immediately for the current crop year, producers and feeders may deliver to any feed mill within the province in which their land is located, grain to be ground or otherwise processed and returned to them.

No restriction will apply in respect of the quantity of grain which may be delivered for the above purpose and no entry need be made in the producer's permit book covering such deliveries, provided that the identity of the grain is preserved while in the feed mill and the entire quantity is returned to the owner immediately after processing. Supplements may be added to such grain during processing if desired.

Part 2—Effective Aug. 1, 1960, for each quarter of the new crop year Aug. 1 to July 31, 1961, but subject to conditions hereinafter set forth:

Producers may deliver to any feed mill within the province in which their land is located, to be exchanged for prepared feeds at such feed mill, quantities of wheat or oats or barley not exceeding in combination thereof 25,000 lb. in total weight for all grain so delivered. Such delivery shall not be subject to the quota of the producer but shall be entered in the permit book of the producer on a supplemental quota page and marked "Feeds Exchange."

The board will be prepared to consider applications from producers requiring feed containing wheat or oats or barley in excess of 25,000 lb. for permission to deliver for exchange, as aforesaid, additional quantities. Such applications should give full particulars including the name and location of the feed mill concerned.

Feeders who are not in possession of a delivery permit book may apply to the board for permission to deliver feed grains produced within the province to feed mills for exchange. In such applications feeders should give full particulars of their operations and requirements, the quantity they desire to deliver and the name and location of the feed mill concerned.

Grain Bank Provisions

Where grain is delivered to a feed mill in exchange for prepared feeds:

1. The quantity of grain by weight delivered by the producer and received by the mill in exchange for prepared feeds shall not exceed the total quantity of grain by weight contained in the prepared feeds received or to be received in exchange by the producer.

2. Delivery of the prepared feeds must be accepted from the feed mill by the producer at the time of delivery of his grain or within six weeks thereafter.

(The extension in time for accepting delivery of the prepared feed will enable the producer to deliver sufficient grain at one time to cover his prepared feed requirements for a six weeks' period and to take delivery of the prepared feeds as required within that period.)

3. Grain offered by a producer in excess of the weight of grain contained in the prepared feeds to be taken in exchange:

(a) May be accepted for delivery by the feed mill from the producer and purchased from him at the board's initial payment prices provided that such grain is deliverable within the authorized delivery quota at the delivery point designated in the producer's permit book and does not exceed 10% by weight of the grain accepted by the feed mill from the producer in exchange for the prepared feeds. In the event of such purchase, a producer's certificate shall be issued to the producer for such grain and the delivery must be entered in his delivery permit book, or

(b) In the event that such grain is not eligible for delivery within the aforesaid quota it shall not be received by the feed mill but shall be retained by the producer.

4. All wheat, oats and barley purchased by the feed mill from a producer in accordance with paragraph 3(a) above, shall be considered as a sale by the board to the feed mill for feed purposes only at a price to be fixed at the close of business on Friday each week.

5. All grain contained in the prepared feeds delivered to producers in excess of the respective amounts of the same kind of grain delivered by producers shall be purchased from the board by the feed mill at the board's current domestic selling price in effect at the time of settlement to be indicated by the board unless such grain has been previously purchased from the board.

6. Separate records must be maintained by the feed mill covering all grain received from producers in exchange for prepared feeds and for the prepared feeds delivered or to be delivered in exchange. Such records shall be subject at any time to examination by any authorized officer, agent or employee of the board.

7. Except with the permission of the board, no shipments of grain to any destination and no shipments of prepared feeds to any destination outside the province in which the feed mill is located shall be made by any feed mill.

To Raise Funds to Support Pig Specialist

SAN FRANCISCO—California feed dealers have been asked to join other groups in the state to raise funds for the support of an extension veterinary service specialist on swine to be stationed at the University of California's Davis campus.

Feed dealers, along with meat packers, hog producers' associations and pharmaceutical companies, have been asked to raise $10,000 for the purpose. The veterinarian, skilled in swine diseases and sanitation, could contact farmers who are now engaged in producing hogs and those interested in going into the hog business in California. He would also educate local veterinarians in various swine diseases and sanitation programs.

NAMED DISTRIBUTOR — Appointment of Burrows Equipment Co., Evanston, Ill., as exclusive U.S. distributor for the complete line of Elba Winchdozers has been announced by Elba Corp. of America. Pictured at the time of the recent meeting held in connection with this appointment are (left to right): John W. Wastcoat, vice president and general manager of Burrows; Rudolph Skucek, export manager of Elba; Parke W. Burrows, president of Burrows Equipment Co., and Earl L. Nichols, treasurer of Burrows.

California Eases Utah Scabies Quarantine

SALT LAKE CITY, UTAH — California has eased its scabies quarantine against slaughter and dairy cattle shipped from Utah, the state board of agriculture here has been informed.

Under the amended quarantine order, dipping of dairy cattle and cattle for immediate slaughter no longer is required. Such cattle still require permit and health certificates, however.

The quarantine was imposed last May after two herds in western Box Elder County were found to be infected with scabies.

Immediate action was taken last spring to treat the disease and cattle from that area were quarantined by the state board of agriculture. This quarantine was lifted after all cases of the disease were cleared up.

The California embargo against feeder and stocker cattle apparently still remains in effect, requiring both inspection and treatment of all such Utah cattle before they may be shipped to California.

Elect Directors

BEND, ORE. — Stockholders of Eastern Oregon Mills at their annual meeting last week elected directors.

Al Cellers, McMinnville, was re-elected president and Howard Turner, Madras, vice president. Harold B. Davis, McMinnville, was elected secretary-treasurer. D. J. Ward, Bend, and Jacob Duerst, McMinnville, were elected new members of the board of directors. Mr. Cellers, Mr. Davis, Mr. Turner, Frank H. Loggan and Arl E. Erickson, Bend, were reelected directors.

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By T. J. Cunha, Department of Animal Husbandry and Nutrition, University of Florida

A new text for feeders, teachers of animal husbandry and their classes, county agents, nutritionists and workers in veterinary pharmaceuticals. Dr. Cunha is head of the Department of Animal Husbandry, a member of the Nutrition Committee of the American Society of Animal Production and the Swine Nutrient Requirements Committee of the National Research Council. The book includes reports on the most recent scientific feeding studies on swine.
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Dr. S. N. Stevens

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SEMINAR

(Continued from page 1)

utives will attend this year's seminar.

The program committee chairman, Darrell M. Runke, general sales manager, Supersweet Feeds, Inc., division of International Milling Co., emphasized the top-flight quality of industry and "outside speakers." He stated, "We have included discussions on the major marketing and sales problems and opportunities which face our industry and have been fortunate in obtaining excellent speakers. We trust seminarians will also benefit from their participation in four audience group discussions which follow the talks. Everyone interested is encouraged to attend."

The program will start Sept. 21 with a report on the AFMA sales organization activity by the council chairman, Robert E. Miller, director of marketing, The Beacon Milling Co., division of Spencer Kellogg & Sons, Inc. This will be followed by W. E. Glennon, AFMA president, on the "Feed Merchandising Plan and the Uniform Sales Contract" and a prominent feed company president "Taking a Look at Credit."

Afternoon Program

The afternoon program begins with a discussion on "Organizing and Operating a Sales Training Department," followed by "Standards of Sales Performance" by Dr. S. N. Stevens, and a panel discussion, "Sales Compensation Plans." Participants in the panel include: Emmet G. Amdahl, general sales manager, Golden Sun Milling Co. (moderator); Ralph Grier, general sales manager, Nutrena Mills, Inc.; J. C. Huckabee, feed sales manager The Quaker Oats Co.; Darrell M. Runke general sales manager Supersweet Feeds Inc., division of International Milling Co., and Frank Steinmetz, director of personnel and training, feed division, The Pillsbury Co.

The Thursday morning program will lead off with a discussion of "Product Liability" by E. C. Fuller, executive vice president, Nutrena Mills, Inc. He will be followed by a panel entitled, "The Feed Business in 1970." Moderator will be E. D. Griffin, vice president, Allied Mills, Inc. Subtopics to be discussed include: "Will There Be Feed Dealers in the Feed Distribution Picture in 1970?" by D. K. Webster, Jr., president, H. K. Webster Co.; "Will the Feed Industry Be Selling Any Complete Feeds in 1970?" by Claude I. Carter, vice president and general manager, Alabama Flour Mills; "Will Feed Manufacturers in 1970 Be Exclusively in the Feed Manufacturing Business?" and "What Will Be the 1970 Picture in the Feed Manufacturing Business on the Matter of the Size of the Manufacturers?"

The seminar concluding speaker will be Pierre D. Martineau talking on "Creative Selling in Today's Market." Mr. Martineau has a background of many years in sales, advertising, promotion, and research. He directs one of the largest consumer research departments of any business organization and his book, "Motivation in Advertising: Motives That Make People Buy," has been translated into several foreign languages. Mr. Martineau has been a leading proponent of motivation studies to reveal consumers' buying reasons and a most articulate and colorful speaker on the subject.

Dr. Samuel N. Stevens is president of Stevens, Thurow & Associates, a professional consulting firm on human relations. He has devoted 30 years to counseling and research in industrial psychology and educational administration. Dr. Stevens has contributed to the field many new personnel techniques, tests for measurement of various abilities and skills and other instruments of personnel control. He has been in considerable demand as a speaker before national associations of management, sales, manufacturers and public relations.

The council's chairman, Robert E. Miller, joined The Beacon Milling Co. 11 years ago as a sales and service representative. Subsequently, he worked in the poultry research department, was granted a leave of absence to obtain a M.S. degree at Cornell University, returned as assistant sales manager of Beacon, was promoted to general sales manager in 1957 and was recently appointed Beacon's director of marketing. Mr. Miller is one of the founders of the AFMA sales executives council and served as its first chairman.

The seminar chairman, Darrell M. Runke, entered the feed business 12 years ago with an ingredient firm and in 1952 was appointed director of animal nutrition for Supersweet Feeds. The following year he was appointed sales manager and three years thereafter, general sales manager.

Panelists' Backgrounds

J. C. Huckabee, participant in the Wednesday afternoon panel, started with The Quaker Oats Co. in 1939 as a retail cereal salesman in his home state of Texas. Subsequently, he served as a jobbing salesman and manager of feed sales in Sherman, Texas. In 1948, Mr. Huckabee moved to Chicago as assistant to the feed sales manager, and then to Memphis, Tenn., as manager of the southern feed division. In 1956, he was appointed to his present position as sales manager of feed products.

Another panel participant, Frank Steinmetz, has spent 25 years in the feed industry with two major companies. His experience includes office service work, feed production, commodity price forecasting, sales and service and sales administration. Currently, he is responsible for the administration of The Pillsbury Co. personnel programs and the development of all feed training programs in the areas of management training, salesman training and dealer training.

A participant in the Thursday morning panel on "The Feed Business in 1970" is Dean Kingman Webster, Jr. Mr. Webster is a past chairman of the AFMA board of directors and has served on many important AFMA committees. He was connected with E. I. du Pont de Nemours & Co. following World War I and joined the H. K. Webster Co. in 1920. He served as treasurer before his present position as president.

A second Thursday afternoon panel participant is Claude I. Carter. He is a current member of the AFMA board of directors and has served on several of the association's committees. As an undergraduate at Alabama Polytechnic Institute, he was elected to two honorary societies. In 1941, he joined Alabama Flour Mills as director of nutritional research and then served in sales and service, became general sales manager, manager of the feed department, general manager and recently vice president and general manager.

The seminar will have a registration fee of $15 which will include a copy of the proceedings, two luncheons, three coffee breaks and a cocktail party. Advance registration can be obtained from the office of American Feed Manufacturers Assn., 53 W. Jackson Blvd., Chicago 4.

HUBBARD

(Continued from page 1)

It was reported that the coordination of Archer operations and personnel with Hubbard operations will be completed by the transfer date of Sept. 1.

A spokesman for Hubbard, which manufactures a complete line of poultry and livestock feeds, but is predominant in concentrates, said the feed programs of Hubbard and Archer will "complement each other and can be integrated easily and efficiently."

Illinois Mill

Hubbard announced that, in addition to purchasing the Archer mill at Mankato, which has a production capacity of about 8,500 tons of feed a month, the Mankato firm plans to take over Archer's lease on a feed mill at Springfield, Ill. (formerly known as the Gainer Mill). The leased Springfield mill has an 8-hour capacity of about 100 tons of feed.

In recent years, ADM has discontinued feed operations at other plants in Minnesota, Kansas and Colorado. An ADM mill at Montgomery, Minn., used for the manufacture of mink and pet foods, is one of 42 elevators and feed plants purchased from ADM by Farmers Union Grain Terminal Assn. (GTA) of St. Paul. (See adjoining story.)

The 300 Archer dealers supplied from ADM mills at Mankato and Springfield are located in the states of South Dakota, Nebraska, Iowa, Wisconsin, Minnesota, Illinois and Missouri.

Position Consolidated

Hubbard officials announced that its acquisition of ADM's feed plant at Mankato "consolidates the position of our company in the Midwest." They said, "It is anticipated this will result in economies of operation and distribution to feeders of the area."

Hubbard Milling Co. has been in the flour milling industry since 1879 and now operates feed plants at Mankato, Minn.; Cedar Rapids, Iowa, and Marion, Ind.

Entry into the feed manufacturing industry was made by Hubbard in 1928 with the introduction of Hubbard's Sunshine Concentrate, claimed to be "The first all-purpose concentrate in America designed to bring to the farmer essential nutritional elements lacking in farm grains alone."

Hubbard opened its new push-button feed mill at Cedar Rapids in 1957.

From its plants at Mankato, Cedar Rapids and Marion, Hubbard distribution extends into Minnesota, Iowa, Indiana, North Dakota, South Dakota, Nebraska, Wisconsin, Illinois, Missouri, Michigan, Ohio, Kentucky and Pennsylvania.

Hubbard has operated a research farm at Mankato for a number of years, and in 1959 leased 308 acres near the original research station north of Mankato. The farms are being coordinated and new facilities are being constructed for extensive research.

Two months ago, Hubbard laboratory technicians moved into new and enlarged quarters.

Infringement Claimed; Denial to Be Filed

KANSAS CITY—A. E. Staley Manufacturing Co., Decatur, Ill., this week filed a patent infringement suit against the Old Rock Distilling Co., Inc., Joplin, and its president, Martin R. Doane.

The defendants subsequently took action to initiate legal denial of the infringement charge, according to an Aug. 11 statement of Mr. Doane.

Staley, asking for injunctive relief and damages, has charged that the allegedly infringed product is sold by one or both defendants under the name "Doane Feed Products Co."

The suit was filed in U.S. district court in Kansas City.

The Decatur, Ill., firm claims that the patent involved in the suit — which was granted Staley Nov. 19, 1959, for a new feed mixture and its manufacturing process — covers the impregnation of soybean hulls with any hygroscopic or hydrophilic feed ingredient, particularly molasses.

E. C. Lane, manager of Staley's feed products department, said the Joplin firm and its president were formally notified along with other dried molasses processors in December of 1959 of the patent granted to Staley's.

Mr. Lane further stated that the Staley product "currently most widely sold under the patent is packaged under the trade name 'Sweetone'."

Exchange Tourney Set

STOCKTON, CAL.—The Stockton Grain Exchange's second annual golf tournament will be held Aug. 25 at the Stockton Golf & Country Club. Jerry Swendsen, chairman of the tournament, said that swimming facilities will be available. A dinner is also on the program.

BUYS FEED BUSINESS

STATE CENTER, IOWA—Leland Henze has purchased the Anderson-Hopper feed, seed and fertilizer business here.

TOP OF THE HOPPER

(Continued from page 3)

MEN FROM THE U.S. Bureau of Animal Industry are reported to have been in Los Angeles area packing plants recently checking on compliance with the government requirement forbidding slaughter of cattle within 48 hours after consuming feed containing stilbestrol. This was pointed out in a recent Arizona Cattle Feeders Assn. bulletin. The U.S. inspectors are demanding that the sanitary board inspection slips state the time when the cattle were taken off feed containing stilbestrol, or were not fed stilbestrol, as the case may be.

A NEW MILL, recently put into operation to serve an integrated poultry operation, turns out feed at a cost much lower than that of mills set up to provide several types of feed. There's no provision for bagging, and long runs are possible. Possibly more companies will see opportunities to operate plants on a one-product basis where feeder concentration makes it feasible. This, of course, is being done to a certain extent.

A LARGE-SCALE cow pool is planned for Florida, according to trade reports. It is said to be a million-dollar project. Financing reportedly is still being worked out. Some cow pools are doing well, others not so well. One problem is said to be that, in some cases, farmers presented with smaller milk checks from the pool than they formerly got for milk, became discouraged and pulled out. They felt the pool arrangement should return as much as when they were doing the work and using their own milking equipment. Also, it is said that some balked at sending "old Emma" to the butcher when her milk production dropped below an economical level.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand slow; supply ample; 400 D, 3,000 A, 19½¢ lb.; 300 D, 3,000 A, 19¢; 300 D, 2,250 A, 17½¢; 300 D, 1,500 A, 16¢; 300 D, 750 A, 14¢; 75 D, 750 A, 13½¢.

Chicago: Demand fair; trend steady; supply ample;; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7½¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15⅝¢ lb.

Denver: Demand and trend steady; supply ample; 21¢.

ALFALFA MEAL

Boston: Demand fair; supply adequate; dehydrated 17%, $50; suncured 13%, pellets, $46.

Portland: Demand good; trend steady; supply adequate; $42-48.90 sacked.

Memphis: Demand fair; trend steady to weak; supply ample; dehydrated, 17% protein, guaranteed 100,000 units, vitamin A, $47.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets, $38; sacked meal, $43, Omaha basis.

Kansas City: Demand good; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets, $39@40 bulk; reground pellets, $41 bulk; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $42@43 bulk, reground pellets, $44 bulk; 20% dehydrated alfalfa, 150,000 A on arrival, $45@50 bulk, reground pellets, $46@51 bulk; suncured alfalfa demand slow, supply scarce, 13% pellets, $36@37 bulk, No. 1 ¼-inch, $38.50 sacked.

Ft. Worth: Demand fair for dehydrated; slow for suncured; light offerings; sacked: Dehydrated 17% 100,000 A, $49@50, truck or rail; suncured: 13% ¼ in. grind, No. 1, $45@46, truck; 15% fine ground dry, $48; with 2% fat added $50, rail or truck.

Philadelphia: Demand and supply fair; 17% dehy., $50.50.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, $45.50 sacked; dehydrated, 17%, 100,000 A, pellets, demand slow, trend steady, supply ample, $42 bulk.

Buffalo: Demand poor; supply ample; trend steady; $55.50 sacked, Boston.

Chicago: Demand fair; trend firm; supply ample; 17% protein, dehydrated, 100,000 units vitamin A, $44.

Los Angeles: Demand and trend steady; supply ample; dehydrated meal, 17% protein, 100,000 A, $50@51; dehydrated pellet meal, 17% protein, 100,000 A, $52@54; suncured meal, 13% protein, $45@46; suncured crumbles, 15% protein, $47@48.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A, $48@49.

Minneapolis: Demand good; supply adequate; 17% dehydrated, 100,000 A units, reground pellets steady at $43; oiled reground pellets steady at $45.

Denver: Demand fair; trend steady; supply ample; dehydrated meal, sacked, $43; $38 pellets.

ANIMAL FATS (STABILIZED)

Kansas City: Demand slow; supply ample; trend steady; prime stabilized tallow, 5¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 6½¢ per lb., yellow grease 4¾¢ per lb.

Ft. Worth: Demand good; supply short; prime tallow, tank cars, 5¾¢; drums, 7¼¢, f.o.b. north Texas packing plants with returnable drums.

Boston: Demand fair; supply steady; tallow, 5¾¢ lb.; yellow grease, 5¼¢.

Louisville: Demand improving; supply good; trend strong; quotations up ¼¢; bleachable white 6¼¢ lb. in tank; white tallow, 6¼¢ lb. in tank; yellow grease, 6¢ lb. in tank.

Ogden: Supply ample; $5.75 per cwt.

Chicago: Demand good; supply moderate; trend higher; cwt., tank truck or carlots, bleachable fancy tallow, $5.87½@6; yellow grease, $5.25.

St. Paul: Demand quite strong; supply ample; bleachable fancy price up ¼¢ to 6⅝¢ lb., f.o.b. producer's plant; good export movement and heavy call from soap manufacturers adding strength to market.

Salisbury, Md.: Demand excellent; supply ample; 5⅝¢ lb.

BARLEY FEED

San Francisco: Demand fair; supply ample; rolled, $58.50; ground, $57.50.

Boston: Demand slow; supply fair; $48.

Chicago: Supply ample; rolled, $38@39 (whole barley, $33@34).

Portland: Demand good; supply ample; trend easy; $42.50.

Philadelphia: Demand slow; supply fair; $42.

Baltimore: Demand fair; trend firm; supply moderate; $46.50 sacked.

Los Angeles: Demand fair; trend steady; supply adequate; standard rolled, $2.85 cwt., sacked; standard ground, $2.85 cwt., sacked.

Chicago: Demand good; trend steady; supply light; $36 sacked.

Denver: Demand fair; trend lower; supply ample; $2.10 bulk, $2.20 sack.

BENTONITE (SODIUM)

Chicago: Demand fair; trend steady; supply ample; f.o.b. Wyoming and South Dakota shipping points; 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Denver: Demand slow; trend steady; supply ample; $24.50 warehouse.

BLOOD FLOUR

Louisville: Demand slow; supply good; trend steady; $75@80 ton, sacked.

BLOOD MEAL

Louisville: Demand slow; trend firm; supply good; $75@80 ton, sacked.

San Francisco: Demand and supply fair; $5.40 per unit of ammonia, sacked.

Omaha: Demand and trend fair; supply plentiful; 80%, $90 sacked, Omaha.

Ogden: Supply ample; $56 per ton in 100 lb. bags, f.o.b. Ogden.

Portland: Demand fair; supply ample; trend steady; $110 sacked.

Chicago: Demand quiet; trend firm; supply adequate; 80% protein, $120 sacked.

Los Angeles: Demand slow; trend steady; supply ample; $6 unit of ammonia, sacked.

BONE MEAL (STEAMED)

Ft. Worth: Demand fair; supply light; sacked: $100, f.o.b. Ft. Worth local manufacture.

Louisville: Demand slow; supply light; trend steady; $80@85 ton, sacked.

San Francisco: Demand good; supply ample; $75 sacked.

Boston: Demand and supply steady; $100.

Portland: Demand fair; supply adequate; trend unchanged; $95@97.50 sacked.

Chicago: Demand quiet; trend firm; supply ample; $75@80 sacked.

Los Angeles: Demand and trend steady; supply limited; imported, $79.75, 20 ton lots, sacked.

Buffalo: Demand and supply light; trend steady; $105 per ton, sacked.

Cincinnati: Demand good; supply fair; trend strong; $95 sacked, Cincinnati.

Denver: Demand and trend steady; supply ample; $110 ton.

BREWERS DRIED GRAINS

Boston: Demand active; supply tight; $46.50 nominal.

Louisville: Demand slow; supply good; trend steady; $44 ton, sacked.

San Francisco: Demand fair; supply ample; $54 sacked.

Ft. Worth: Demand slow; supply sufficient; 26% protein, $46 August.

Philadelphia: Demand and supply fair; $45.25.

Buffalo: Demand and supply good; trend steady to higher; $48, Boston.

Chicago: Demand good; trend higher; supply fair; 26% protein, $35@36.

St. Louis: Demand fair; trend firm; supply limited; $38.50.

Los Angeles: Demand slow; supply adequate; trend steady; $49.50.

Cincinnati: Demand poor; trend steady; supply adequate; $42.

BREWERS DRIED YEAST

Louisville: Demand slow; supply good; trend firm; 10@10½¢ lb., sacked.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Omaha: 10½¢ lb.

Boston: Demand and supply steady; 11¢ lb.

Portland: Demand fair; supply ample; trend steady; 11@12¢ lb.

Omaha: 10½¢ lb.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9½@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Los Angeles: Demand slow; trend steady; supply adequate; 10¢ lb. in 5 ton lots, 11¢ lb. in 1 ton lots, 12¢ lb. in less than 1 ton lots, all sacked.

Buffalo: Demand fair; trend steady; supply ample; $9.10 cwt.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.; all sacked.

Denver: Demand small; trend steady; supply ample; 9¢ lb.

BUTTERMILK (CONDENSED)

Boston: Demand and supply steady; 4¼¢ lb.

Louisville: Demand dull; supply near zero; trend steady; $4.25 cwt. in paper drums.

San Francisco: Demand fair; supply good; $5 drums.

Ogden: Supply good; $4.40 per 100 lb. drum.

Philadelphia: Demand slow; supply fair; $4.25.

Chicago: Demand quiet; trend steady; supply fair; cwt., 500 lb. bbls., $3.25@3.50.

Los Angeles: Demand and supply limited; trend steady; 5½¢ lb., 100 lb. lots in barrels; 4½¢ lb., 500 lb. lots in barrels.

CALCITE CRYSTALS AND FLOUR
(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $13; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

Los Angeles: Demand slow; trend steady; supply adequate; flour, $19.15, 20 ton cars, sacked; meal, $11.15, 20 ton cars, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

CHARCOAL

San Francisco: Demand steady; supply ample; $141 sacked.

Boston: Demand and supply light; granular No. 6, $110.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

Los Angeles: Demand slow; supply adequate; trend unchanged; hardwood poultry, $156, less than ton lots, sacked; $144.40, ton lots, sacked.

COCONUT MEAL

Portland: Demand slow; supply ample; trend unchanged; $70.50.

San Francisco: Demand good; supply tight; solvent, $59.50; expeller, $70.

Los Angeles: Demand fair; supply ample; trend steady; copra cake, $72@73.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply ample; 300 D, 3,000 A, 20¢ lb.; 600 D, 2,250 A, 18½¢; 300 D, 2,250 A, 18¢; 600 D, 1,500 A, 17¢; 300 D, 1,500 A, 16½¢.

CONDENSED FISH SOLUBLES

Boston: Demand slow; supply plentiful; 2¢ lb.

Los Angeles: Demand slow; supply adequate; trend steady; 2@2½¢ lb.

Denver: Demand and trend steady; supply scarce; 3¼¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL
(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $41.50, meal $66.60.
Atlanta: Feed $45, meal $70.
Birmingham: Feed $43.60, meal $68.60.
Boston: Feed $46.50, meal $71.50.
Chicago: Feed $35, meal $60.
Cleveland: Feed $42.90, meal $67.90.
Denver: Feed $45.20, meal $70.20.
Ft. Worth: Feed $43.70, meal $68.70.
Indianapolis: Feed $40.20, meal $65.20.
Kansas City: Feed $35, meal $60.
Louisville: Feed $42.60, meal $66.60.
New Orleans: Feed $44.90, meal $69.90.
New York: Feed $46.10, meal $71.10.
Norfolk: Feed $45.50, meal $70.50.
Philadelphia: Feed $45.70, meal $70.70.
St. Louis: Feed $35, meal $60.

CORN OIL MEAL

Louisville: Demand dull; supply light; trend steady; $47.45 ton, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $39.

COTTONSEED MEAL

Louisville: Demand slow; supply light; trend steady; new or old process, $66.50 ton, sacked.

San Francisco: Demand good; supply tight; 41%, $64; 44%, $67.

Portland: Demand slow; supply adequate; trend lower; $67.

Omaha: Demand slow; trend strong; supply tight; 41% solvent, $66.70 bulk delivered Omaha.

Kansas City: Demand fair; supply scarce; trend strong; 41% old process, $62.50@63, Kansas City.

Ft. Worth: Demand fair for meal, good for hulls; supply sufficient on meal, extremely scarce on hulls; 41% old process, $67, f.o.b. mills Ft. Worth; carlots solvent, 2% fat added, $65.90, delivered Ft. Worth, pellets $2 additional, hulls, $26.

Boston: Demand and supply steady; $73.50.

Wichita: Demand fair; supply ample; 41% old process, $67 sacked.

Memphis: Demand fair; supply poor; trend steady; prime 41% protein, old process, $67; new process, 41% solvent, no offering.

Ogden: Supply good; 41%, $70@72.

Philadelphia: Demand slow; supply light; $74.

Los Angeles: Demand slow; trend easier; supply ample; $61@62.

Chicago: Demand fair; trend higher; supply moderate; Memphis basis, hydraulic, $56; solvent, $56.

St. Louis: Demand slow; trend steady; supply adequate; solvent, $61.

Buffalo: Demand fair to poor; supply fair; $79 sacked, Boston.

Cincinnati: Demand poor; trend steady; supply adequate; $63.

Denver: Demand fair; trend steady; supply ample; $59 ton.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; supply ample; trend steady; 1,500 ICU 9⅝¢ lb.; 3,000 ICU 11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@13¢ lb.; 3,000 ICU 10¢ lb., warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Portland: Demand fair; supply ample; trend unchanged; $93.50, delivered for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92 dock for a minimum of 10 ton lots.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck loads of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb., multiwall bags; $71.35 bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03, f.o.b. Cincinnati.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum prosphorus 18½%, granular, $85 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants; California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truckloads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truckload $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Denver: Demand stronger; trend steady; supply ample; $93.50, delivered Denver.

DISTILLERS DRIED GRAINS

Boston: Demand active; supply scarce; nearby $61 nominal; September delivery, $58.

San Francisco: Demand fair; supply ample; solubles, $79 sacked.

Louisville: Demand slow; supply light; trend steady; bourbon grains for August, light, $61 ton, sacked; dark, $53 ton, sacked; solubles, $73 ton, sacked.

Philadelphia: Demand slow; supply very light; trend unsettled; $61.25.

Buffalo: Demand good; supply poor; trend steady; $61, Boston.

Cincinnati: Demand poor; trend steady; supply adequate; $53.

DRIED BEET PULP

Boston: Demand active; supply scarce; sacked, $78 nominal.

San Francisco: Demand good; supply fair; $39.80.

Ogden: Supply ample; $41@46 per ton.

Portland: Demand good; supply tight; trend steady; $51.60 sacked.

Los Angeles: Demand and trend steady; supply ample; $45.40@45.50.
Buffalo: Demand poor; supply scarce; trend steady; $71 sacked, Boston.
Denver: Demand fair; trend steady; supply limited; $75 sacked, f.o.b. Denver.

DRIED BUTTERMILK

Louisville: Demand slow; supply normal; trend steady; 12@12½¢ lb., sacked.
San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.
Boston: Demand good; supply short; 14¢ lb.
Ogden: Supply good; $17.25 per 100 lb. bulk.
Buffalo: Demand fair; trend steady; supply ample; $13.25 cwt.
Los Angeles: Demand and supply fair; trend steady; $13½@13¾¢ lb., sacked.
Chicago: Demand fair; trend firm; supply plentiful; cwt., sacked medium acid, $10.75@11; cwt., sacked sweet cream, $10.75@11.

DRIED CITRUS PULP

Boston: Demand light; supply scarce; sacked, $47.50, f.o.b. Florida.
San Francisco: Demand and supply fair; $46 sacked.
Los Angeles: Demand good; supply tight; trend firmer; orange pulp, $40; lemon pulp, $38.
Buffalo: Too scarce to quote.

DRIED SKIM MILK

Louisville: Demand dull; trend steady; supply light; 12@12½¢ lb., sacked.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Boston: Demand good; supply short; 12½¢ lb.
Ogden: Supply ample; $15.15 per 100 lb. drum.
Philadelphia: Demand slow; supply fair; $13.
Portland: Demand fair; supply good; trend unchanged; 13¢ lb.
Chicago: Demand slow; trend steady; supply ample; cwt., $10.50@10.75 sacked.
Minneapolis: Slipping demand pulled down price 75¢ from last week to $11.75 cwt.
Los Angeles: Demand and supply limited; trend steady; 15¢ lb. less than ton lots, sacked; 14¾¢ lb. ton lots, sacked.
Buffalo: Demand fair; trend steady; supply ample; $15.45 cwt. spray.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

DRIED WHEY

Ogden: Supply ample; $6.90 per 100 lb. bag, sacked.
Portland: Demand fair; trend steady; supply ample; $5.95 cwt., sacked.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed, $5.50 cwt., sacked.
Louisville: Demand slow; supply light; trend steady; 5¾@6¢ lb., sacked.
San Francisco: Demand steady; supply good; $5.75 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard, $5.75 sacked, delivered Ft. Worth; ton lots, $6, f.o.b. warehouse Ft. Worth.
Boston: Demand fair; supply adequate; 5¼¢ lb., f.o.b. shipping points.
Philadelphia: Demand slow; supply fair; $6.25.
Los Angeles: Demand slow; trend steady; supply adequate; $5.35 cwt., carloads, sacked; $5.60 cwt., l.c.l. sacked.
Chicago: Demand quiet; trend firm; supply adequate; cwt., $4.75 sacked.
Minneapolis: Demand slow; supply ample; steady at $5.45 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Denver: Demand and trend steady; supply ample; $5.80 per 100 lb., truckload.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand good; supply sufficient; 85%-87% protein $72.50@75 nominal sacked, f.o.b. trucks north Texas plants.
Boston: Demand steady; supply scarce; $69, f.o.b.
Los Angeles: Demand poor; trend steady; supply adequate; $1 unit of protein, sacked.
Salisbury, Md.: Demand spotty; excess supply; $70 ton, f.o.b.

FISH MEAL

Ft. Worth: Demand fair; supply sufficient; sacked: 65% protein Peruvian, $91, scattered August; 60% protein menhaden, $99, delivered Ft. Worth.
San Francisco: Demand slow; supply ample; $1.35 a unit of protein, sacked.
Louisville: Demand dull; trend steady; supply light; $125 ton, sacked.
Omaha: Demand good; supply plentiful; trend strong; 60% menhaden, $115, f.o.b. Omaha.
Portland: Demand good; trend steady; supply adequate; $1.85 per protein unit, sacked.
Boston: Demand fair; supply plentiful; 60%, $93; 57%, $83, both f.o.b. Gloucester.
Ogden: Supply normal; $1.50 per unit, f.o.b. Coast; 65%, $110@112.
Buffalo: Demand fair; trend barely steady; supply good; 60% menhaden, $105 bulk; $110 sacked.
Minneapolis: Demand slow; supply ample; little change in market from last week; Gulf menhaden steady at $100@105 sacked, truck lots, Minneapolis: 70% Canadian herring holding at $1.60 a unit, f.o.b. West Coast, immediate shipment; Alaskan herring unchanged at $1.52 a unit, f.o.b. West Coast, subject to production; West Coast 60% blended off $4@5 to $114@116 sacked, delivered Minneapolis.
Chicago: Demand slowed up again; supply liberal; trend easier; sacked: menhaden, East Coast $90@95; Gulf $90@95; menhaden scrap, East Coast $86@91; Gulf $86@91; Canadian herring meal $1.55 a unit of protein.
Los Angeles: Demand slow; trend easier; supply moderate; local production, 60% protein, $1.50@1.55 unit, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $132.
Denver: Demand medium; trend steady; supply short; $1.54 per protein unit, f.o.b. West Coast.

HAY

Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $40@42; No. 2 $38@40; No. 3 prairie nominal $30@32; No. 2 Johnson, nominal $28@30, delivered Texas common points.
Boston: Demand slow; supply improving; No. 2 timothy, $40@43.
Louisville: Demand very slow; trend steady; supply normal; hay, local, any variety, No. 1 $30@32, No. 2 $28@30; straw, any variety $18@20; new straw now plentiful.
Wichita: Demand low; supply sufficient; new crop, prairie $19@21, alfalfa $18@22, baled.
Ogden: Supply ample; $20 per ton in the field; $23 per ton in the barn.
Portland: Demand fair to good; trend steady to firm; supply adequate; $30@34 per ton baled, Portland and Seattle.
Philadelphia: Demand slow; supply light; $24.50@25.50.
Los Angeles: Demand limited; supply moderate; trend steady; U.S. No. 1, $32@34; U.S. No. 2 leafy, $29@30; U.S. No. 2 green, $30@31; U.S. No. 2, $27@28.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy, $30; No. 2 timothy, $27; No. 1 red clover, $32; clover mixed with straw, $25.

HOMINY FEED

Louisville: Demand dull; trend strong; supply light; $47.50 ton, up $1.50 ton, sacked, but no demand at any price.
Boston: Demand fair; supply light; nearby, $48.50; September delivery, $49.
Kansas City: Demand improved; trend firmer; supply limited; white or yellow, $33@33.50.
Memphis: Demand poor; supply ample; trend steady; white, $40.70; yellow, $40.70.
Chicago: Demand quiet; trend steady; supply ample; $39.50.
St. Louis: Demand slow; trend steady; supply adequate; yellow, $37.50.
Buffalo: Demand good; trend steady to higher; supply poor; $50.50@51, Boston.
Cincinnati: Demand poor; trend steady; supply adequate; $42.

LINSEED OIL MEAL

Philadelphia: Demand fair; supply light; 34%, $70.70.
Wichita: Demand fair; supply ample; 34%, $78 sacked.
Kansas City: Demand slow; trend steady; supply ample; solvent process, $52.50@53; old process, $58@58.50 bulk, Minneapolis.
Portland: Demand slow; trend steady; supply tight; $84 sacked.
San Francisco: Demand fair; supply ample; $76.
Omaha: Demand poor; trend easy; supply ample; 34% solvent, $58.80 bulk; 32% old process, $64, Omaha basis.
Louisville: Demand dull; trend steady; supply light; old process, $77 ton, sacked, unchanged; new process, $72 ton, sacked, up 50¢ ton.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent, $70 August rail.
Boston: Demand slow; supply ample; $71.
Los Angeles: Demand and trend steady; supply light; local production, 31% protein, $73@74, old crop.
Minneapolis: Sideways movement, solvent $53.50, expeller $58.50.
Chicago: Demand fair; trend firm; supply adequate; Minneapolis basis, solvent, $53; expeller, $58.50.
Cincinnati: Demand poor; trend steady; supply adequate; new process, $53.50; old process, $60, Minneapolis.
Denver: Demand slow; trend steady; supply ample; $71.80 sacked, Denver.

LIVER AND GLANDULAR MEAL

Omaha: Demand poor; trend slow; supply plentiful; 65%, $175 sacked, Omaha.

MALT SPROUTS

Boston: Demand and supply limited; $48 sacked.
Chicago: Demand quiet; trend easier; supply fair; No. 1, uneven bags, $38.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1, $37.

MEAT AND BONE MEAL

Ft. Worth: Demand good; supply sufficient; meat and bone, 50%, $71.50 bulk; $74.50 sacked, f.o.b. Ft. Worth.
Portland: Demand fair; trend lower; supply ample; $70 sacked.
Wichita: Demand fair; supply sufficient; 50%, $80 sacked, f.o.b. plant.
Omaha: Demand good; trend strong; supply fair; $80.
Louisville: Demand dull; trend steady; supply good; $75@80 ton, sacked.
San Francisco: Demand fair; supply ample; $1.45 per unit of protein.
Kansas City: Demand fair; supply ample; trend firm; 50%, $75.
Boston: Demand and supply steady; $1.10 per protein unit; converted 50%, $67.50.
Ogden: Supply ample; $76.50 per ton, 50% protein, in 100 lb. bags.
Buffalo: Demand good; trend steady; supply light; 50% meat scraps, $77.50 bulk; $82.50 sacked.
Chicago: Demand slow; trend firm; supply fair; 50% protein, $75@80 sacked.
St. Louis: Demand fair; trend steady; supply ample; $73.
St. Paul: Demand poor; supply ample; bottom steady at $77, top off $3 at $80.
Los Angeles: Demand slow; supply ample; trend easier; 50% protein, $1.50 unit.
Cincinnati: Demand good; supply fair; trend strong; 50% meat and bone scraps, $75.
Denver: Demand fair; trend stronger; supply ample; $66.50, f.o.b. plant.

MILLFEEDS

Minneapolis: Slipping demand, heavier mill run in this area because of threatened and actual mill strikes in East; bran down $1 to $32.50; middlings down $3 to $32.50; red dog holding at $47.50, but on weak side.
Kansas City: Demand poor; supply ample; trend weak; sacked bran, $33@33.50; bulk bran, $27.50@28; sacked shorts, $35.50@36; bulk shorts, $31@31.50; bulk middlings, $28@28.50.
Chicago: Millfeed more plentiful, largely result of broad-scale improvement in flour sales; talk here of at least 20 million sacks sold of which about two thirds was southwest and balance northwest, and as a consequence, prices have been scaled down with bran cut $1 ton, midds. off $1.50 and red dog down about $1.50. Quoting: Carlots, bulk, bran, $34; middlings, $34.50, and red dog, $49.
Ft. Worth: Demand fair; offerings adequate; bran, bulk $39, burlaps $42.50; gray shorts, bulk $41.50, burlaps $44.50; bulk middlings $39, delivered Texas common points; bran $1@1.50 lower, shorts $1.50@2 lower and midds. down $2.50 compared with previous week.
Omaha: Demand poor; trend easy; supply ample; sacked bran, $35; sacked gray shorts, $37.50; bulk standard midds., $31.50; all Omaha basis.
St. Louis: Sacked bran, $38.50; shorts, $41.50; bulk bran, $32.50; middlings, $33.50.
Wichita: Demand good; supply sufficient; basis Kansas City: Bran $34.25@34.75, shorts $37.25@37.75; both bran and shorts declined $1.50 compared with the preceding week.
Memphis: Demand poor; supply ample; trend weak; wheat bran, $36.70; gray shorts, $40.70; standard midds., $36.70.
Louisville: Demand slow; supply good; trend weak; bran, $45.50 ton, sacked, down $1.50 ton; mixed feed, $49.60; shorts, $50.10, both sacked.
Cincinnati: Demand fair; trend higher; supply adequate; bran, $40; middlings, $44.
Buffalo: Heavy supplies, light sales; trading featured with wild covering by mixers out West, and prices stopped sliding there; western prices off a bit, prices here cut down to western competition; bran off about 50¢ from a week ago and middlings were off $1.50; red dog unchanged; sacked differential on bran and middlings unchanged at $4.50. Quotations Aug. 10: Bulk bran, $37@37.50; sacked, $41.50@42; bulk middlings, $38@38.50; sacked, $42.50@43; bulk red dog, $54@55.50; sacked, $55@60.
Boston: Demand spotty; supply adequate; bran, $45; middlings, $47.
Philadelphia: Demand spotty; supply fair; trend unsettled; bran, $44.50; standard middlings, $46.50; red dog, $61.50.
Ogden: Supply ample. To Utah and Idaho: Red bran and millrun, $34; midds., $39. To Denver: Red bran and millrun, $41; midds., $46. To California: Red bran and millrun, $41.50; midds., $46.50, f.o.b. San Francisco and Los Angeles.
Denver: Demand and supply fair; trend lower; shorts $35.75, bran $36.75, millrun $38.25.
Portland: Demand slow; trend easy; supply tight; $38.50@39.50.
San Francisco: Demand slow; supply ample; millfeed, $42.50; red bran, $46.75.
Los Angeles: Demand good; supply light; trend steady; standard millrun, $44.50; red bran, $48.

MINERAL FEED

Portland: Demand good; supply adequate; trend steady; $44@45.
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Ogden: Supply good; $113 per ton in 50 lb. blocks; $103 per ton, granular 50 lb. bags.
Wichita: Demand good; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.
Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $106, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50 lb. paper bags).
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Memphis: Demand fair; trend steady to higher; supply ample; blackstrap, 10¢ per gallon, tank car, f.o.b. New Orleans, and $23.55 ton, delivered Memphis, truck.
Boston: Demand fair; supply ample; 14¢ gallon in tank cars.
Louisville: Demand slow; trend strong; supply good; 10½¢ gallon, up ½¢ gallon, tank car lots, f.o.b. Gulf ports. It was predicted weeks ago that molasses would move up, based on the present Cuban situation. It has done just that. Up 2¢ a gallon in about two months from 8½¢.
Kansas City: Demand fair; supply tight; trend strong; blackstrap, 10½¢ gal., New Orleans.
Ft. Worth: Demand fair; supply sufficient; blackstrap 10½¢ gal., f.o.b. Houston; delivered Ft. Worth truck $24.65, seller's market price on date of shipment.
San Francisco: Demand and supply good; $20.75, f.o.b. cars, Richmond, Cal.
Buffalo: Demand good; supply ample; trend steady; 14¢ gal., f.o.b. Albany.
Los Angeles: Demand excellent; trend firmer; supply ample; $21.80, f.o.b. tank cars; $21.75, f.o.b. tank trucks.
St. Louis: Demand slow; supply adequate; trend firm; 10½¢ gal., tank cars, New Orleans.
Cincinnati: Demand fair; trend steady; supply adequate; 11½¢ gal., New Orleans.
Minneapolis: Steady at $30, tank truck, delivered.
Denver: Demand fair; supply ample; trend steady; 10½¢ per gallon, New Orleans; $32.95 ton, Denver.

OAT PRODUCTS

Philadelphia: Pulverized white demand slow, supply fair, $49; domestic slow, supply light, $30.50; Canadian oat feed demand fair, supply fair, $29.50 sacked.
Portland: Demand fair; supply tight; trend easy; $50@51.
Ft. Worth: Demand slow; supply sufficient; oat millfeed, 10% protein, $42.20; reground, $28.70 sacked, new jutes.
Boston: Demand and supply fair; white pulverized, sacked, $55.50; reground oat feed, sacked, $33.
Louisville: Demand slow; trend easy; supply ample; reground, $27.80 ton, sacked, off $3.50 ton; rolled, $82.80 ton, sacked, unchanged; feeding, $78.80 ton, sacked, unchanged; pulverized, $51.80 ton, sacked, down 50¢ ton; crimped, $66.30 ton, sacked; down $1 ton.
Memphis: Demand poor; trend weak; supply ample; 3½% protein, reground oat feed, $27.25.
Chicago: Demand quiet; trend easier to steady; supply fair; reground oat feed, $18; No. 1 fine ground feeding oatmeal, $71; feeding rolled oats, $75.
Los Angeles: Demand slow; supply limited; trend unchanged; local production pulverized, $63 sacked.
Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats, $47@53.
Minneapolis: Market mostly unchanged, feeding rolled off $2 at $75; feeding oatmeal steady at $66; pulverized down $1 to $44.50; reground oat feed steady at $24; crimped holding at $59.50.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, Eastern $26, sacked.
Portland: Demand fair; supply ample; trend unchanged; $27@35 sacked.
Louisville: Demand slow; trend steady; supply good; in 80 lb. paper sacks $23.45, in 50 lb. paper sacks $23.70, in 25 lb. paper sacks $25.95.
Boston: Demand and supply steady; $26.05 in paper.
Los Angeles: Demand steady; trend unchanged; supply ample; $15.40 sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags, $23.85; 50 lb. bags, $24.10; 25 lb. bags, $26.35.

PEAT MOSS

Chicago: Demand and supply fair; trend firm; standard 7¼ cu. ft. bale $3.80.
Portland: Demand limited; supply ample; trend unchanged; $3@3.15 per 5.6 cu. ft. bale.
Philadelphia: Demand and supply fair; $2.99, f.o.b. pier.
San Francisco: Demand and supply fair; $3.75 per bale.
Boston: Demand and supply steady; $3.15 bale in car lots.
Los Angeles: Demand steady; supply ample; trend unchanged; Canadian 5.6 cu. ft. bales, $3.65.
Cincinnati: Demand and supply good; trend steady; truck loads, $3.45 bale, f.o.b. Cincinnati.

POTASSIUM IODIDE, U.S.P.

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture: 100 lb. drums $1.25½ lb.; 200 lb. and up $1.23½ lb., all delivered.
Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35, 200 lb. in 100-lb. drums $1.35, 100 lb. drums $1.38, 25 lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Boston: Demand fair; supply improved; $70, f.o.b. shipping point.
Ft. Worth: Demand good; supply scarce; 55% protein, $78@82.50 nominal sacked, f.o.b. north Texas plants.
Los Angeles: Demand fair; trend weaker; supply adequate; $1.30 unit of protein, sacked.
Salisbury, Md.: Demand fair; supply adequate; meal, $80 ton, f.o.b.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements), 4¢ gram in less than ton lots in 3.36@16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand good; supply ample; bran, $43 sacked; polish, $47 sacked.
Ft. Worth: Demand slow; supply limited; rice bran, $32@33, f.o.b. south Texas rice mills; hulls $3.50 sacked, f.o.b. mills September delivery.
Los Angeles: Demand and supply limited; trend steady; California production high fat content, bran, $48 sacked.

SCREENINGS

Chicago: Demand slow; trend steady; supply ample; ground grain, $34; Canadian $33.50.
Buffalo: Demand fair; supply good; trend steady; ground and sacked, $36 NY, L&R; unground, bulk, market tight, unquoted.
Cincinnati: Demand fair; trend steady; supply adequate; unground grain screenings, $21.50@22.50, Cincinnati.
Minneapolis: Softening tone, little Canadian offered at a nominal $20, Duluth; domestics in slump but still within past range: Lights at $13@23, mediums at $24@33 and heavies at $34@43; flax screenings, 15% basis, down $2 to $38.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked)

Atlanta: $20.40@20.47.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.37.

SORGHUMS

Ft. Worth: Demand fair; supply sufficient; No. 2 yellow milo, $1.88@1.90 per cwt., delivered Texas common points.
Ogden: Supply good; $43@44 per ton.
Los Angeles: Demand steady; supply tighter; trend stronger; milo, $2.13% cwt.

SOYBEAN OIL MEAL

Memphis: Demand fair; supply ample; trend steady; prime 44% solvent, $52, f.o.b. Memphis.

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Omaha: Demand slow; trend easy; supply ample; 44%, $52.60, delivered Omaha.
Ogden: Supply good; 41% protein, $69@79 (50% protein, $74@76).
Philadelphia: Demand and supply fair; 44%, $48, Decatur.
Boston: Demand cautious; supply plentiful; 44%, $48; 50%, $52.50, both f.o.b. Decatur.
Ft. Worth: Demand fair; supply sufficient; 44%, $59.10 immediate; $59.60 August; $59.20 September-October-November-December; 50%, $66.80 August; $67.20 September-October-November-December.
Chicago: Cash commodity and futures making new lows for the season. August, September and October all sold into new low seasonal ground; spot meal down $1.50@2 ton for the week. Quoting: Carlots, Decatur basis—44% protein, unrestricted billing, $49; eastern trunk line, $46.50; 50%, unrestricted billing, $54, and eastern trunk line, $51.
Portland: Demand slow; supply ample; trend lower; $69.40.
San Francisco: Demand fair; supply ample; $72.90.
Louisville: Demand slow; supply normal; trend easy; $60.70 ton, down $2.20 ton.
Kansas City: Demand slow; spot supplies pressing; trend weak; 44% solvent process, $45.50@46, Decatur.
Wichita: Demand good; supply ample; 44%, $63; 50%, $69 sacked; 44%, $60; 50%, $66 bulk, f.o.b. Wichita.
St. Louis: Demand slow; supply ample; trend easy; 44%, $52.
Los Angeles: Demand very slow; supply heavy; trend easier; $70.40@70.90.
Cincinnati: Demand fair; supply adequate; $49.50@50, Decatur.
Minneapolis: Production up, demand down, creating further weakness; drop of $2.50 to $41.50@42, Decatur, for 44%; 50% weaker at $46.50@47, Decatur.
Denver: Demand fair; trend steady; supply ample; 44%, $60.

TANKAGE

St. Paul: Demand poor; supply ample; down $3@5 from last week to $72@75.
Wichita: Demand fair; supply sufficient; 60%, $80 sacked, f.o.b. plant.
Ft. Worth: Demand fair; supply ample; 60% digester, $76 sacked, Ft. Worth.
Omaha: Demand good; trend strong; supply fair; $80.
Kansas City: Demand slow; trend easy; supply ample; 60% digester, $70.
Louisville: Demand dull; trend firm; supply good; 60% protein, $75@80 ton, sacked.
Chicago: Demand quiet; trend firm; supply fair; 60% protein, $75@80 sacked.
St. Louis: Demand fair; supply ample; trend steady; $73.
Cincinnati: Demand good; supply fair; trend steady; 60% digester, $75, Cincinnati.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5½¢ per lb., f.o.b. south Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.45, less than 50 lb. $1.50, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand fair; trend steady; supply limited; $60, f.o.b. Buffalo.
Minneapolis: Steady at $56, sacked.

McCabe Grain Company Limited
WINNIPEG-VANCOUVER
LONDON, ENGLAND
Schwartz & Co. (Grain) Ltd.
Victoria Products and Grain (overseas agents) Ltd.

EGG FLOCK

(Continued from page 6)

west north central and 2% in the east north central regions. Increases were 8% in the west and 3% in the south Atlantic states. Layer numbers were about the same as a year ago in the south central region.

The rate of lay was 56.9 eggs per 100 layers on Aug. 1 compared with 56.2 a year earlier. This was an increase of 1% and a record high for that date. All regions of the country showed increases from last year except the West, where rate of lay was down 2%. Increases were 2% in the north Atlantic, east north central, west north central and south central states and 1% in the south Atlantic states.

Pullets not of laying age on Aug. 1 were estimated at 126,580,000—22% below a year earlier, with holdings in all regions showing a decrease from last year. Decreases were 32% in the south Atlantic, 30% in the north central, 28% in the north Atlantic, 19% in the east north central, 16% in the west north central and 9% in the west states. The January-June hatch of egg-type chicks was 17% below a year earlier. The preliminary estimate of chickens raised on farms in 1960 is 15% less than the number raised in 1959.

Potential layers (hens and pullets of laying age plus pullets not of laying age) on farms Aug. 1 totaled 402 million, 9% below a year earlier and 20% below average. This is the smallest Aug. 1 number of potential layers on farms since estimates began in 1938, the Crop Reporting Board notes. Decreases from 1959 were 15% in the north Atlantic, 10% in the south Atlantic and south central and 9% in the north central states. Potential layers in the west states were 4% above Aug. 1 last year.

Prices to Producers

Producers received an average of 31.5¢ a dozen for eggs in mid-July, 1960, compared with 31.2¢ a month earlier and 30.4¢ a year earlier.

Prices received by producers for all chickens (farm chickens and commercial broilers) in mid-July averaged 17.3¢ per pound live weight, compared with 17.1¢ a month earlier and 15.5¢ in mid-July, 1959.

Farm chickens averaged 12.2¢, up 1.2¢ from a year earlier. Commercial broilers averaged 17.9¢, 1.8¢ per pound higher than in mid-July, 1959.

The cost of farm poultry rations in mid-July was $3.34 per 100 lb.—down 9¢ from a year earlier. The average cost of broiler-growing mash was $4.64 per 100 lb., compared with $4.85 in mid-July, 1959. Cost of the turkey-growing mash was $4.62 per 100 lb., compared with $4.82 on July 15, 1959. The egg-feed, farm chicken-feed, commercial broiler-feed and turkey-feed price ratios were all more favorable than a year earlier.

FDA

(Continued from page 1)

it inspects fresh fruit and vegetable commodities before they are processed. USDA inspectors, operating on a continuous inspection basis, examine raw agricultural commodities for compliance with FDA-permitted residual tolerances for pesticidal chemicals.

What FDA contemplates is application of similar activity to the feed processing industry — an activity which heretofore has been used by the big supermarkets when they insist on affirmation that fresh fruits and vegetables delivered to them from country shipping points conform to tolerance requirements on materials used in the production of or protection of such commodities.

This information for the feed industry from FDA apparently has been set forth as an admonition, as a warning on a matter which was described by an official as an "urgent" proposition. The timing of any official announcement can only be conjectured. It is interesting to note, however, that the advance information came the day following an FDA conference with a committee from the state control officials' group.

The October session of the control officials may be some sort of deadline.

Clouded Situation

The feed industry position in a situation wherein FDA seems to be taking affirmative and stronger action under the food additive amendment is clouded with some collateral conditions which FDA officials suspect but are not now willing to concede.

For example, information came to this reporter from a top level California economist who said that some deliveries of alfalfa hay to dairymen had contained higher levels of residual DDT than is permissible. According to this source, investigation disclosed that there was no evidence that DDT had been used in protection of the alfalfa hay crop.

This report raised eyebrows at FDA, but they were not willing to confirm, although they agree they are looking at this situation.

Another aspect of the use of chemicals in feed involves the West Coast and Mountain States fish feed industry. The same source who advised the feed industry to get onto problems of chemicals in feed said FDA had in its possession information disclosing that certain fish feed fed to trout appeared to have produced extreme enlargements of the liver. But FDA had not decided that such enlargements necessarily indicated malignant liver developments.

The fact that FDA is thinking about this situation could be a cautionary note.

Stronger Action Seen

In general, it appears to this reporter that FDA is now moving in the direction of firmer, stronger, more aggressive control over the use of chemicals in feeds.

FDA officials are moving administratively under conditions which have existed.

The contemplated effort to require feed manufacturers to confirm compliance with FDA pesticidal residue tolerances is a projection of conditions which have existed before the food additives amendment or the Miller pesticidal chemical amendment was in existence.

The apparent plans for the government to assert its authority may in some quarters seem to be exaggerated. However, it has been coming. And the feed industry may have to contemplate an adjustment to activities of the government in this field.

(Regarding the problem of guarantees or certification by feed millers that a feed is free of spray residue, industry groups have pointed out the many problems involved, and some have mentioned the difficulty in being sure or assuring that there are no residues in any of of the many ingredients from many sources. Feed men have been urged to resist requests for written guarantees that feed will not cause any illegal residues in milk when fed to dairy herds. —Feedstuffs, July 9, 16.)

DIRECTOR

(Continued from page 1)

last winter, but was able to carry on his activities with his company and attended the American Feed Manufacturers Assn. convention last May in Chicago.

He joined G.L.F. in 1924, the year after the cooperative established offices and a feed manufacturing plant in Buffalo, as a feed research specialist. He developed hundreds of feed formulas for all types of livestock, including many special purpose feeds.

For several years he also headed agricultural advertising and research, Ithaca, which handled G.L.F. advertising.

Active in the AFMA, he had served as president of the feed industry council, now the feed survey committee, and as a member of the feed technical advisory committee and the National Pet Food Institute of the AFMA. He was a member of the Poultry Science Assn., the Society of Animal Production and the American Dairy Science Assn.

He was born in Schenectady County, New York, Oct. 10, 1899, and was graduated from Cornell University in 1924. He also received a master's degree in animal nutrition from the university.

Survivors include his wife, two sons and a daughter.

Pre-Cook Chickens

MORTON, MISS.—A new phase of the poultry processing program at the million dollar plant of B. C. Rogers & Sons was started last week with the pre-cooking of chickens. Company officials say this type of processing is gaining favor throughout the area of the U.S. served by this plant.

The largest individually owned poultry operation in the South, B. C. Rogers & Sons employs some 600 people in the company's various operations.

FEWER FEEDERS

(Continued from page 6)

est weight. The efficiency of feed utilization does not seem to be influenced, Mr. D'Armi said. Feather picking posed a problem in the pens having peat moss litter. The other materials (peanut hulls, ground corn cobs, Stazdry and wood chips) did not present this problem.

Likewise, the birds in the litter test will be sent to the processing plant to be graded. Market quality, breast blisters and bruises will be evaluated.

Two pens on each type of litter will be reused the entire four-flock period. And two pens on each type will be cleaned out and new litter added after each flock.

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SOUTHERN STATES

(Continued from page 1)

ous year to 690,000 for 1959-60. "The major decreases in feed volume came in broiler and turkey feeds, as a result of deliberate limiting of poultry contracting programs," Mr. Gordon said. "These curtailed operations not only reduced the cooperative's risks, but also reduced the potential for higher net savings."

Mr. Gordon noted that total service volume for the entire SSC system for the year was $201,600,000, as compared with $240,800,000 in 1958-59 when the rapid expansion of poultry contracting pushed feed volume of the cooperative to new heights. "Last year's volume figure," said Mr. Gordon, "was about the same as for the year ending June 30, 1958."

Net savings for SSC's wholesale operations totaled $2,181,000 for the year, up considerably from the $1,300,000 of the previous year, said Mr. Gordon. The board allocated this amount to the payment of regular dividends on preferred and common stock. It also authorized the payment to patrons of one half of 1% refund on purchases during the year. The refund will be paid, three fourths in cash, and one fourth in book equities of the cooperative, Mr. Gordon said.

Net savings for the entire SSC system, including affiliates, totaled $3,613,000, up about $650,000 over the previous year, said Mr. Gordon.

"No patronage refund was paid a year ago," Mr. Gordon said, "because of greatly reduced savings resulting from unprecedented low markets on broilers and turkeys in 1958-59 and losses of about $3 million on the cooperative's contracting programs.

"Improved broiler markets, plus many efficiencies, which were put into effect during the last year, resulted," Mr. Gordon said, "in a much brighter operating picture in the year just closed."

The refund of one half of 1% will be supplemented in many communities by additional refunds by local farm supply and petroleum cooperatives affiliated with Southern States, he said. These local farm supply cooperatives had total savings of about $1,415,000 last year while petroleum cooperatives had an additional $625,000 in savings. Local boards of directors allocate these savings for their respective cooperatives, Mr. Gordon pointed out.

Farmers who marketed grain last year through SSC Grain Marketing Service will receive a refund of sixtenths of a cent per bushel, he said.

Reflecting the drop in feed volume was the total wholesale service volume decline from $152,500,000 in 1958-59 to $126,200,000 in 1960 and the volume of local farm supply cooperatives from $72,500,000 to $59,400,000 in the same period. Petroleum service through local cooperative local plants was about the same as in the previous year. Egg marketings showed a slight increase in over-all volume.

"Fertilizer tonnage, though affected by the bad weather of February and March, came within 7,000 tons of equalling the all-time record volume in 1958-59," said Mr. Gordon. "Seed volume increased about 4%. Miscellaneous farm supply volume—other than feed, seed, fertilizer and petroleum products—dropped slightly. This, too, was the result of the poultry contracting reduction."

Mr. Gordon cited a net worth increase of $1.5 million, a reduction in long term bank debt and an improved ratio between working capital and current indebtedness.

WEIGHMASTER DIES

CHICAGO — William R. Fischer, weighmaster for the Chicago Board of Trade and a member of the Chicago Grain Elevator & Processing Superintendents chapter since 1951, died in his sleep recently. He had undergone an operation several weeks ago and had been failing since.

ELEVATORS

(Continued from page 1)

feeds, now in the hands of Hubbard Milling Co., Mankato. However, ADM still is a major producer of feed ingredients.

GTA said it paid $1½ million for the string of ADM elevators in southwestern Minnesota. Operation of the elevators will be continued by the cooperative with the same personnel, GTA said.

The former ADM elevators are within a 75-mile radius of Mankato, the location of a soybean plant which was bought last week by GTA from Honeymead Products Co. for $6 million (Feedstuffs, Aug. 6).

GTA Capacity Boosted

Total grain storage capacity of the elevators was announced as 5½ million bushels, which boosts GTA's country elevator capacity to 26 million bushels and its terminal capacity to 30 million bushels.

GTA said 22 of the 42 elevators involved in the transaction have custom feed plants.

The 37 country elevators, which are of wooden construction, range in capacity from 25,000 to 150,000 bu., GTA officials said. The five concrete sub-terminal elevators at Windom, Sleepy Eye, Morris, Montevideo and Marshall have an average capacity of 300,000 bu. each.

M. W. Thatcher, GTA's general manager, said the cooperative would continue to operate the ADM feed plants and stores and "we will expand our feed merchandising."

Mr. Thatcher also commented, "We were anxious to get into these towns in southwestern Minnesota without building new facilities, and this provided a means. We were also anxious to get a firm supply of corn, soybeans and oats from that area, where we have a large (Farmers Union) membership."

Elevator Locations

Country elevators purchased from ADM by GTA are at: Belle Chester, Bombay, Carver, Eagle Lake, Elko, Elysian, Faribault, Hampton, Janesville, Jordan, Judson, Kilkenny, Le Center, Lonsdale, Madison Lake, Montgomery, Morristown, Norwood, Randolph, St. Charles, St. Clair, Stillwater, Waterville, Amboy, Butterfield, Garden City, Kasota, Lake Crystal, Lewisville, Madelia, Marshall (also the location of a sub-terminal elevator), Mountain Lake, Odin, Rapidan, St. James, Truman and Vernon Center.

RESEARCH

(Continued from page 1)

"Any research contributing to our fund of knowledge is worthwhile.

"The feed man puts the results of the research to use. He is in a unique situation. He must be in part a scientist, in part a businessman, and in part a salesman.

"Quite obviously, it is up to those in each company to evaluate and sift the new research findings in order to determine when and how they should be applied. These men must evaluate the economic relationships that will occur from the application of the new research data.

"We must be careful, in our haste to be first in this competitive field, not to make errors that will be harmful to our customers."

The third group belonging to the team of co-workers is the dealers. This group has the greatest opportunity to counsel with livestock producers and to assist them with nutrition problems, according to Dr. Cravens.

"It is my understanding that most of you in the audience are feed dealers. This is good, for we can only assist our customers if we are better informed than they. We must be continually seeking and evaluating new facts. Dealers who go into the feedlots adequately prepared can render a valuable service—and the interested and prepared dealer is the one who will be successful," concluded Dr. Cravens.

Following are summaries of other talks on various aspects of poultry, swine and ruminant nutrition—presented by speakers appearing at the two-day nutrition school:

SPECIFICATIONS FOR POULTRY FEEDS—"The use of electronic computers to calculate least-cost feed formulas has focused attention on the need for detailed specifications for different kinds of feeds," said Dr. H. R. Bird, chairman of the department of poultry husbandry at the University of Wisconsin.

"Feed formulators have always used specifications, in part recorded in tables and in part recorded in the memory, either consciously or subconsciously."

Dr. Bird pointed out that with the increasing stock-pile of knowledge that is accumulating, feed formulators should be able to put down on paper a complete set of specifications, within the limits of which any possible combination of ingredients would make a satisfactory feed.

In some cases, Dr. Bird explained, we must go beyond the minimum nutrient requirements in establishing some of the specifications. But in drawing up the list of ingredients from which to select, one would also have to specify maximum permitted levels for some ingredients.

During his talk, Dr. Bird showed tables specifying minimum levels of vitamins and trace minerals, specifications for major minerals, and specifications for energy, protein and amino acids.

"There are still many gaps in our knowledge regarding specifications for nutrients," said Dr. Bird, "and some may have to be revised as new developments occur. But we are at a point where we can begin calculating detailed specifications for different kinds of feeds."

ENVIRONMENT AND ITS EFFECT ON POULTRY PRODUCTION—Environment is receiving increasing attention from scientists in the poultry field. Dr. W. O. Wilson, poultry husbandry department, University of California, explained how important environment really is, and how it affects a poultry flock.

First, the nutritional requirements of poultry are altered by the environment. For example, vitamin D is vital for birds housed in windowless buildings, and ascorbic acid is needed during hot weather to keep the shell thickness of eggs normal.

"At last, information is available on the caloric needs of chickens during different seasons of the year," said Dr. Wilson.

The effect of environment on disease has been given some attention, too. Researchers found that the speed of disease is influenced to some extent by the ventilation rate. In general, rapid rates of air replacement dilute the contaminated air. On the other hand, the heat lost by excessive ventilation may work a hardship on young birds.

"Genetics and environment are related in many ways," said Dr. Wilson. "Some of the nature of breed and strain differences are observed in studying their responses to different environments."

For example, the leghorn is resistant to high temperatures and therefore more suited to warmer climates. Light requirements of birds are another environmental study getting lots of attention, now.

One of the more important findings in temperature regulation of birds has been the fact that the birds are able to store heat during the day and lose it at night.

The body temperature of birds varies much more than does that of humans. As soon as the chicken has its full coat of feathers and has developed its homeothermic mechanism, it is able to withstand considerable cold, too.

"I question just how much we can afford to put into a laying house to control the environment," said Dr. Wilson. "We were unable to get our money back from cooling our poultry houses during the summer time at the University of California. Of course, it would be a different matter for those living in a hotter climate.

"Our recommendation at the present time still stands for the use of foggers as a standby procedure. For poultry men in Wisconsin, a hose would be suitable for cooling if you use a fine nozzle."

Dr. Wilson concluded by saying that a constant environment is not a cure-all. In fact, experiment stations studying the problem have been surprised to find that the birds given a fluctuating temperature laid more eggs than those given constant temperatures.

AMINO ACIDS AND PROTEIN IN SWINE NUTRITION—No one is more aware of the fact than is the feed industry that the cost of protein for mixed feeds is higher than for most other constituents and that feeding excess protein is expensive, said University of Wisconsin swine researcher Dr. W. G. Hoekstra. "Although our present knowledge of amino acids in swine nutrition is incomplete and sometimes possibly inaccurate, we are at a point where amino acid composition of rations must be considered for the most economical formulation of high quality swine rations."

It isn't easy at this point to determine the amino acid contents of a feedstuff since tables won't always agree. A study conducted by Rutgers University a few years ago indicated that 25 different and competent laboratories analyzed identical samples and arrived at results which differed by more than plus or minus 20%.

Even so, said Dr. Hoekstra, the best answer now is to use tables of average amino acid composition, keeping in mind their limitations and perhaps allowing a certain amount for "insurance."

"With our present available data, one can get a pretty good idea whether or not a given ration is likely to be critically low in an amino acid, which amino acids are limiting and what amount of protein supplement (or possibly pure amino acid) will correct the deficiency."

Also, it's now possible to obtain individual amino acids for consideration as dietary supplements. These so called "free amino acids" are free in the sense that they are not bound together in proteins. Cost is currently the limiting factor in their use, said Dr. Hoekstra.

Even though reference to amino acid requirements is more accurate and meaningful than statement of protein requirement, data are still too incomplete to recommend a complete change at this time.

"As we have learned more about swine nutrition, the specified need for protein has decreased considerably," remarked Dr. Hoekstra. "For example, in about 1940, the protein requirement of growing pigs were believed by various research workers to be as follows: 25 to 75 lb.—22 to 26% protein; 76 to 125 lb.—16 to 20% protein, and 126 to 200 lb.—12 to 15% protein."

More recent protein requirements as specified by the Swine Nutrition Subcommittee of the National Research Council follow: 25 to 50 lb.—15 to 17% protein; 51 to 100 lb.—13 to 15% protein; 101 to 150 lb.—12 to 13% protein, and 151 to 200 lb.—12% protein.

The reasons for this change are largely explained by two considerations. First it was once believed that sources of animal protein were superior and had to be included in the ration.

Following the identification of vitamin B_{12}, it was shown that when this

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
June 4	1,144	456	832	1,002	127	768	2,319	2,152
June 11	1,145	436	828	908	91	746	2,208	2,342
June 18	1,231	456	872	849	70	789	2,212	2,246
June 25	1,159	482	711	782	111	765	2,198	2,261
July 2	1,161	516	821	756	133	815	2,202	2,173
July 9	1,158	440	758	772	107	760	2,176	2,154
July 16	1,155	534	831	800	109	739	1,868	2,233
July 23	1,118	396	752	737	114	924	1,887	2,271
July 30	1,114	415	788	749	84	787	1,785	2,212
Aug. 6	1,132	497	796	773	99	719	1,657	2,109

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
June 4	1,368	528	3,689	355	7,923	233	4,442	2,608
June 11	1,325	621	3,826	386	7,873	228	4,410	2,687
June 18	1,199	608	3,504	360	7,710	213	4,248	2,703
June 25	1,127	589	3,584	375	7,490	233	4,184	2,775
July 2	1,178	574	3,356	340	7,449	204	4,265	2,695
July 9	1,132	625	3,364	377	7,298	209	4,057	2,705
July 16	1,258	625	3,237	401	7,142	212	3,856	2,511
July 23	1,208	683	3,235	324	6,776	243	3,934	2,463
July 30	1,303	508	3,077	296	6,640	198	3,659	2,191
Aug. 6	1,123	678	3,095	333	6,231	199	3,518	2,183

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	Total 22 areas 1959
June 4	4,404	533	2,458	385	290	1,142	39,360	34,791
June 11	4,376	482	2,591	360	268	1,236	39,118	35,135
June 18	4,348	589	2,473	284	262	1,197	38,448	34,516
June 25	4,279	551	2,482	389	329	1,133	38,189	34,136
July 2	4,200	556	2,331	349	270	1,105	37,449	34,340
July 9	4,064	449	2,217	326	301	1,098	36,547	33,667
July 16	4,046	443	2,179	366	258	1,018	36,021	33,881
July 23	3,801	411	2,113	354	234	920	34,898	33,455
July 30	3,642	433	2,126	309	228	947	33,491	32,044
Aug. 6	3,714	360	2,037	382	253	1,072	32,880	31,302

vitamin was added, swine grew well on rations containing only plant sources of protein. Also, many research workers believe that a smaller percentage of dietary protein is required by swine when antibiotics are fed.

The second reason for decreasing the protein requirement figures is our greater understanding of what we mean by protein quality.

"We have been better able to design protein sources so that the amino acids are better balanced, and less total protein need be fed to provide ample amounts of all the 'essential' amino acids," said Dr. Hoekstra.

MINERALS IN NUTRITION—Dr. E. J. Underwood, director, Institute of Agriculture, University of Western Australia, said that despite the long history of animal research, the most remarkable progress in recognizing the significance of minerals has been accomplished within the past three decades.

"It has long been known that the level of one mineral in the diet can influence the metabolism and the requirement of another," said Dr. Underwood.

Calcium-Zinc Interaction: Much research has shown that increasing the calcium content of the diet above normal requirements for growth in pigs (0.6% Ca) enhances the severity of zinc deficiency and results in depressed growth, appetite and feed efficiency.

"The zinc content of ordinary cereal grain-based diets for growing pigs and poultry is such that a very small margin of safety exists and the level of calcium supplementation of such diets must be carefully watched," pointed out Dr. Underwood. "It is true that higher calcium intakes can be tolerated by adding more zinc to the ration—but it is important to note that, in many cases, zinc supplementation is necessary because the calcium intakes are too high in the first place.

"There is no satisfactory answer yet on the mode of action of calcium on zinc metabolism, but there is no doubt of the importance of the calcium:zinc dietary ration."

Copper-Molybdenum-Inorganic Sulphate Interactions: Copper retention in an animal is markedly affected by the level of molybdenum in the diet and this limiting effect of molybdenum is exerted only in the presence of adequate supplies of inorganic sulphate, explained Dr. Underwood. "This is one of the most intriguing nutritional findings of recent times."

It should be emphasized that neither molybdenum alone nor sulphate alone interferes with copper retention, but the effectiveness of either is increased to a maximum as the other is increased.

Selenium-Sulphate Interaction: Arsenic in appropriate doses provides considerable protection against selenium poisoning. This has been known for some years, said Dr. Underwood.

"More recently, it was discovered that raising the inorganic sulphate level of the diet also affords protection against high selenium intakes and perhaps provides a partial explanation of the value of high protein diets. It seems that dietary inorganic sulphate has a much wider nutritional significance than was first suspected, and that more notice will have to be taken of this component in dietary formulations," he concluded.

BEEF CATTLE NUTRITION — "Beef research has a long way to go before it catches up with the poultry industry," said Dr. John Matsushima, University of Nebraska.

The six major factors affecting the efficient production of beef that were stressed by Dr. Matsushima include nutrition, management, health, marketing, genetics and environment.

"We need to learn more about the nutrient requirements of beef animals," he pointed out, "and the preparation and proportions of nutrients within a feed.

"There is little doubt regarding the effectiveness of antibiotics. And there are reasons explaining why we get so many varied responses from different stations reporting tests with antibiotics."

Some of these factors include age of animals in the test, type of ration, level and kind of antibiotic, duration the antibiotic is fed, and the carry-over effect of the antibiotic.

Antibiotics seem to be more effective when used with rations high in roughage content.

"We aren't specifically recommending the use of antibiotics," said Dr. Matsushima. "But if producers do want to use them, we recommend about 10 mg. per 100 lb. of body weight accompanied by a low-roughage ration."

Turning to tranquilizers, Dr. Matsushima reported that very little assistance can be expected in rate of gain or feed efficiency through the use of tranquilizers.

Dr. Matsushima studied 29 tests from different experiment stations, and found that the average daily gain for the animals receiving tranquilizers was 2.08 lb. This compares with gains of 2.06 for the control animals.

"We have to leave dynafac with a question mark, too," he said. "Twelve tests from nine different experiment stations showed that little benefit on gains or efficiency is derived from the use of dynafac."

Stilbestrol has consistently given a favorable response. Dr. Matsushima pointed out, however, that stilbestrol is more effective when fed to steers than to heifers. "Stilbestrol doesn't seem to speed the gains on young animals, either," he added.

Some tests have reported that stilbestrol lowers the quality of the meat. But no indications of this have been evident in tests conducted at the University of Nebraska.

"Because of the increased gains realized through the feeding of stilbestrol, some people might market their animals with less total feed consumed. If they gain faster and go to market sooner on less feed, then the finish or quality might conceivably be lowered some.

"Hormone implants look promising at this time," concluded Dr. Matsushima. "But 43 experiments from 14 different experiment stations showed little benefit from the use of enzymes."

PREVENTING DRUG AND PESTICIDE CONTAMINATION OF DAIRY PRODUCTS—The problems of contaminated milk through the use of drugs and pesticides were discussed at the nutrition school by Dr. C. W. Burch, department of veterinary science, and Dr. E. H. Fisher, department of entomology, both of the University of Wisconsin.

"Contamination or adulteration of milk and milk food products with antibiotics and other drugs has assumed major importance in the past several months," said Dr. Burch. "One example might be the recent cranberry 'fiasco'."

Results of surveys conducted in the past five years by the Pure Food and Drug Administration show that from 2 to 11% of milk, which was being delivered or offered to customers, contained antibiotics.

Pure Food and Drug Administration defines adulteration of milk in the following manner: 1) Contamination with a harmful substance; 2) contamination with filth; 3) handling under unsanitary conditions; 4) the product of a diseased animal.

"The responsibility for selling milk containing no contamination belongs to the dairyman," said Dr. Burch. "But there is also a moral obligation of the veterinarian, feed dealer or anyone else who sells antibiotics or drugs to farmers to remind them of the importance of caution.

"In most cases, the dairyman will be selling milk free of adulteration from drugs if he allows 72 hours, or 6 milkings, to pass between the last treatment and the marketing of the cow's milk.

"Many drugs will remain in the cow and be passed into the milk for longer periods of time, however, following intravenous, intramuscular or other forms of injection."

Dr. Burch emphasized that milk from all quarters of a cow should be discarded following the intramammary infusion of only a single quarter. This milk must be discarded for at least 72 hours.

Tests at the University of Wisconsin show that there is transfer of penicillin from treated to untreated quarters at dosage levels of 100,000 and 300,000 units of penicillin per quarter, too. The blood stream was found to play a major role in this transfer. Concentrations of the penicillin in milk of untreated quarters were proportional to the total dose of infusion.

"The milk is not legally saleable anyway," pointed out Dr. Burch. "Remember, point No. 4 under the Pure Food and Drug Administration's definition eliminates the marketing of milk produced by a diseased cow. And any cow requiring treatment must be diseased."

Discussing the pesticide contamination of milk, Dr. Fisher reported that there would be no pesticide-contamination problems if everyone observed the tolerances set up by FDA. "Unfortunately," he remarked, "there are many misuses and some mislabeling of the pesticides.

"Although FDA has issued more than 2,000 tolerances for about 100 pesticide chemicals on various crops, there is no tolerance for any pesticide in milk or in products made from it. It seems ironical that applesauce as a food for infants could legally contain up to specific amounts of 46 pesticides . . . and milk none."

A test conducted in 1955 showed that 33 out of 169 milk samples (20%) contained from 0.05 to 1.5 parts per million of DDT. But in 1958, a new test showed that only 2.5% of 936 milk samples contained significant residues of DDT or other common chlorinated hydrocarbon insecticides.

"Blanket statements to the effect that users of insecticides will make safe applications if they 'follow the label' should not be made . . . at least, not until labeling policies are in tune with this statement," said Dr. Fisher.

"While recommended dosage rates change occasionally, the label on old stocks in a store won't change with them. There are efforts made to get these labels brought up to date, but the job is never complete.

"During the fiscal year of 1958-59, more than 1,500 samples of agricultural chemicals were examined by USDA regulatory personnel, and more than 12% of these were found to be seriously misbranded, adulterated, or in violation of federal regulations. So the best advice we can give Wisconsin farmers is to follow the university's recommendations which we release currently," said Dr. Fisher.

FEEDING FOR CARCASS QUALITY — "Meat animal producers have two carcass goals to achieve in order to meet the demands of the consumer," said Robert Kaufman, swine specialist at the University of Wisconsin. "First, we need a high proportion of muscle or red meat in relation to fat, and secondly, we must provide tenderness, flavor and juiciness."

Mr. Kaufman presented the following as recent research which has contributed to our knowledge of the effects feeding may have on carcass quality:

Quantity, quality of protein in rations—The quantity of protein as well as its amino acid composition can materially influence the lean cut yields in swine. West Virginia workers have reported that supplementation of swine rations containing peanut oil meal with lysine or lysine and methionine or natural sources of these amino acids improved significantly the muscle development.

Quantity, quality of inexpensive animal fats—A number of studies using high energy feed such as grease tallow or lard in place of carbohydrate have produced varying results. North Carolina workers adding 5 to 10% fat to rations observed no adverse effects on carcass composition. On the other hand, Louisiana tests recorded increased fat deposition over the carcass.

Antibiotic supplementation — Antibiotic supplementation of rations fed to meat animals has produced varying results. Some tests have found antibiotics to have a deleterious effect on the carcass when standard protein levels were used.

Limited feeding—Considerable data points to the fact that full feeding results in fatter hogs as compared to limited feeding, use of pasture, more fiber in the ration or hand feeding. With cattle, the level of nutrition prior to placing the animals in the feedlot may have an effect on carcass composition. More research is needed to evaluate this relationship.

Marbling and fattening — Common opinion is that grain feeding over a long feeding period will produce meat with improved marbling. Undoubtedly, fattening an animal will develop good marbling if an animal has this inherited characteristic. In tests, however, animals fed alike may vary considerably in quantity of marbling. This leads researchers to believe that marbling is an inherited characteristic, pointed out Mr. Kaufman.

MARKETS

(Continued from page 2)

by comparison with the same week in July as well as the corresponding one last August, it shows up to just a little better advantage.

This is the logical time of the year for heavier feeding of turkeys and it's being reflected in some improvement in that area. A small improvement is noted also in most poultry feeds.

Action in the hog market has been such as to be encouraging for the prospect for fairly good demand for mixed feeds from that source. The bulk of hog sales are running fairly steady around recent best levels, although there has been inclination for tops to back away somewhat from the late July 19 level at Chicago.

Mill running time shows little difference from recent weeks. If anything, it's a little better than it was, but this still leaves room for improvement.

South Central

The feed sales pace continues at about the same rate as in recent weeks with most plants operating on a four to five-day basis.

Demand for the general line of feeds is described as being "just fair." There has been very little activity in dairy and cattle feeds this summer and this is a limiting factor in mill running time.

Hog feed sales have eased off but pig feeds are turning in a good sales record. In fact, some mills are selling more pig feeds at present than they did a year ago, despite the smaller spring pig crop. Hog feeders in the area are reported to have been active buyers in the feeder pig market.

Manufacturers agree that formula feed pipelines are almost empty. Indications are that neither dealers nor feeders are keeping normal inventory supplies on hand. New purchases are being held down to minimum levels.

The general opinion is that a good rally in ingredient prices would bring on a rush of replacement buying. But, as long as prices hold in a narrow range, there is little incentive for buyers to stock up.

Ohio Valley

Although sales of formula feeds this week in the Ohio Valley were in fairly satisfactory volume, the intense heat and high humidity seem to have served as a depressing factor in arousing other than routine interest. While production schedules were being maintained on a 40-hour basis at most plants, the sales activities were widely diversified, with no one type of feed standing out saleswise.

Temperatures in the mid-90's throughout the week were ideal for corn and other farm crops, and it is now expected that despite the very unfavorable spring weather, practically all fall crops will reach near-record proportions.

Meanwhile, ample supplies of eggs, poultry and other meats are presently available, resulting in only minor changes in retail price quotations. As a result of this static situation, feed manufacturers can only look forward to school reopenings with the hope that there will be a definite upswing in interest displayed in food for humans—and feeds for farm animals.

Mountain States

One dealer reports this week that politics is causing a slow down in the prices and volume of the feed business. People seem to be waiting to see what is going to happen in the election races.

Another dealer reports feed prices and sales volume down over the same period of last year, except molasses. But he said the slow down is just seasonal.

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Pacific Northwest

Oregon, Washington and Idaho formula feed movement was barely maintained at the previous volume, but there continued to be a very dependable movement of broiler, turkey and egg mashes.

Continued hot, dry weather further deteriorated pastures and ranges, but failed to offset the availability of ample stocks of newly harvested grain and hay crops.

Feedstuffs quotations weakened during the week under the influence of plentiful ingredient supplies and seasonally restricted buying interest. As a result, the moderate offerings of some principal items pressed for demand with some rather sharp price declines noted.

Soybean meal prices dropped $4 ton, while meat and bone meal listings closed $3.50 ton below the previous period, with cottonseed meal prices finishing $1 a ton lower.

Wheat millfeed values were off 50¢ ton as a reflection of a slow demand. The lone advance was posted by blackstrap molasses, which closed $1 ton higher.

Soybean Meal Futures Show Downward Trend

MEMPHIS, TENN.—Soybean meal futures contracts during the past week reflected a downward trend on the Memphis Board of Trade. The cash soybean oil meal picture also reflected lower prices.

The decline would indicate that the industry is still in an over-production situation.

Prices of soybean oil meal on the futures board declined $2 during the week, with new crop options down $1 ton. Trading was very slow. Some transactions of a liquidation nature were made.

Traders at the moment are looking to the government estimate for new crop soybeans due Aug. 17. They anticipate some pattern for the nearby and new crop options will develop as a result of the new estimate.

The cottonseed oil meal futures market was steady and quiet during the week. Trading prices traveled in a narrow range. There was some buying at the $51@51.50 level for new crop options, but the traders were reluctant to trade at these levels.

The cash market for nearby months was relatively firm but there is very little production available. That which is available is in a sacked condition.

There has been some mill offerings of new crop but trading has not developed.

Run Pesticide Residue Checks on Dairy Feed

SACRAMENTO, CAL. — The Bureau of Field Crops reports that it is running spot checks for pesticide residues on all mixed dairy feeds along with their normal analysis.

During the month of June, 18 samples were analyzed. Of these, 15 samples showed a negative test, while one sample showed 0.6 ppm. of DDT and two samples showed 0.2 ppm. DDT.

A sample of cloverseed screenings showed 0.8 ppm. of Toxaphene and dried tomato pulp showed 0.4 ppm. DDT and 0.8 ppm. DDD. The method of testing was the paper chromatographic process.

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